

**24-Port 10/100Mbps with 2-Gigabit  
Web Smart Ethernet Switch**

**FGSW-2402VS/FGSW-2620VSF**

**User's Manual**



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## Revision

PLANET 24-Port 10/100Mbps with 2-Gigabit Web Smart Ethernet Switch User's Manual

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# 1. INTRODUCTION

## 1.1 Checklist

Check the contents of your package for following parts:

- FGSW-2402VS or FGSW-2620VSF x1
- User's manual CD x1
- Quick installation guide x1
- Power cord x 1
- Rubber feet x 4
- Rack mount accessory x 1

If any of these pieces are missing or damaged, please contact your dealer immediately, if possible, retain the carton including the original packing material, and use them against to repack the product in case there is a need to return it to us for repair.

In the following section, the term “**Web Smart Switch**” means the two Switch devices, ie. FGSW-2402VS and FGSW-2620VSF; term of “**switch**” can be any third switches.

## 1.2 About the Switch

The FGSW-2402VS offers 24 10/100Mbps Fast Ethernet ports with 2 open slots (port25, 26). The two open slots can be installed by optionally two of 1000Base-T port, 100Base-FX, or 1000Base-SX/LX fiber-optic interfaces. The distance can be extended from 100 meters (TP), 2 kilometers (Multi-mode, ST or SC), up to 15 kilometers (Single-mode, SC). Also the FGSW-2620VSF provides 24 10/100Mbps Fast Ethernet ports and 2 Gigabit TP/SFP combo ports, the two Gigabit ports either can be 1000Base-T for 10/100/1000Mbps or 1000Base-SX/LX through SFP (Small Factor Pluggable) interface. The distance can be extended from 100 meters (TP), 550 meters (Multi-mode fiber), up to above 10/50/70/120 kilometers (Single-mode fiber).

Both Web Smart Switches are equipped with non-blocking 8.8Gbps backplane greatly simplifies the tasks of upgrading your LAN to cater for increased bandwidth demands.

For efficient management, the Web Smart Switch is equipped with web interface. The two Web Smart Switches can be programmed for basic switch management functions such as port speed configuration, Port Trunking, Port-based VLAN, Port Mirroring, QoS, bandwidth control, Access Control list and Misc Configuration.

The Web Smart Switch provides port-based VLAN (including overlapping). The VLAN groups allowed on the 2 Web Smart Switches will be maximally up to 26 for port-based VLAN. Via supporting port trunking, the Web Smart Switch allows the operation of a high-speed trunk combining multiple ports. The Web Smart Switch provides seven groups of up to 8-ports for trunking, and it supports fail-over as well.

With its Auto-Negotiation capability, all the RJ-45/STP ports of Web Smart Switch can be configured to speeds of 10/20Mbps or 100/200Mbps automatically. In addition, the product is equipped with the MDI/MDI-X auto detection for easily plug and play connection, regardless of cabling types-straight through or crossover.

## 1.3 Features

- Complies with the IEEE 802.3, IEEE 802.3u, IEEE 802.3z and IEEE 802.3ab Gigabit Ethernet standard
- 24-Port 10/100 Mbps Fast Ethernet Switch
- 2 open slots for 1000Base-T and 100Base-FX, 1000Base-SX/LX fiber-optic interface with various connection media and distances (FGSW-2420VS)
- 2-Port Gigabit TP/SFP combo ports( FGSW-2620VSF)
- Each Switching ports support auto-negotiation-10/20, 100/200Mbps supported
- Auto-MDI/MDI-X detection on each RJ-45 port
- Prevents packet loss with back pressure (half-duplex) and 802.3x PAUSE frame flow control (full- duplex)
- High performance Store and Forward architecture, broadcast storm control, runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- 8K MAC address table, automatic source address learning and ageing
- 512K Bytes packet buffers
- Web interface for Switch basic management and setup
- Support up to 26 port-based VLAN groups
- Support up to 7 Trunk groups, each trunk for up to maximum 8 port with 800Mbps bandwidth
- Port mirroring allows monitoring of the traffic across any port in real time
- Support QoS and bandwidth control on each port
- Supports Access Control List function
- 19-inch rack mount size
- Internal full-range power supply suitable for worldwide use
- EMI standards comply with FCC, CE class A

## 1.4 Specification

Product	FGSW-2402VS	FGSW-2620VSF
<b>Hardware Specification</b>		
Ports	24 10/ 100Base-TX RJ-45 Auto-MDI/MDI-X ports	
Module Slots	2 open slots for 1000Base-T and 100Base-FX, 1000Base-SX/LX fiber-optic interface	2 Gigabit TP/SFP combo ports
Switch Processing Scheme	Store-and-forward	
Throughput (packet per second)	6.547Mpps	
Switch fabric	8.8Gbps	
Address Table	8K entries	
Share data Buffer	512K Bytes	
Flow Control	Back pressure for half duplex, IEEE 802.3x Pause Frame for full duplex	
Dimensions	440 x 120 x 44 mm, 1U height	
Weight	1.87kg	1.85kg
Power Requirement	100~240V AC, 50-60 Hz	
Power Consumption / Dissipation	13.5 Watts maximum / 46 BTU/hr maximum	

<b>Temperature</b>	Operating: 0~50 degree C, Storage -40~70 degree C
<b>Humidity Operating:</b>	10% to 90%, Storage: 5% to 95% (Non-condensing)
<b>Smart function</b>	
<b>System Configuration</b>	Web interface
<b>Port Status</b>	Display per port's disable/enable status, per port's link status and speed duplex mode. Also the Flow control status
<b>Port Configuration</b>	Per port disable/enable, Auto-negotiation disable/enable. 10/100Mbps full and half duplex mode selection. Flow control disable/enable and bandwidth control on each port
<b>Trunk Configuration</b>	Support 7 groups of 8-Port trunk support
<b>VLAN Configuration</b>	Maximum up to 26 VLAN groups for port-based VLAN
<b>Port Monitoring</b>	One Mirroring port to monitor one mirrored port. The monitor modes are RX, TX and RX & TX
<b>QoS Configuration</b>	IEEE 802.1p QoS on each port
<b>Port counters</b>	Display detail traffic counters on each port
<b>Access Control List</b>	Supports up to 16 Access Control list group
<b>Standards Conformance</b>	
<b>Regulation Compliance</b>	FCC Part 15 Class A, CE
<b>Standards Compliance</b>	IEEE 802.3 (Ethernet)
	IEEE 802.3u (Fast Ethernet)
	IEEE 802.3ab(Gigabit Ethernet)
	IEEE 802.3z(Gigabit Ethernet)
	IEEE 802.3x (Full-duplex flow control)
	IEEE 802.1p QoS

## 2. HARDWARE DESCRIPTION

This product provides three different running speeds – 10Mbps, 100Mbps and 1000Mbps in the same Web Smart Switch and automatically distinguishes the speed of incoming connection.

This section describes the hardware features of Web Smart Switch. For easier management and control of the Web Smart Switch, familiarize yourself with its display indicators, and ports. Front panel illustrations in this chapter display the unit LED indicators. Before connecting any network device to the Web Smart Switch, read this chapter carefully.

### 2.1 Front Panel

The Front Panel of the Web Smart Ethernet Switch consists of 24x Auto-Sensing 10/100Mbps Ethernet RJ-45 Ports, the FGSW-2402VS provide two open slots can be installed by optionally two of 1000Base-T port, 100Base-FX, or 1000Base-SX/LX fiber-optic interfaces. Also the FGSW-2620VSF provides 2 Gigabit TP/SFP combo ports either can be 1000Base-T for 10/100/1000Mbps or 1000Base-SX/LX through SFP (Small Factor Pluggable) interface.

The LED Indicators are also located on the front panel of the Web Smart Switch.

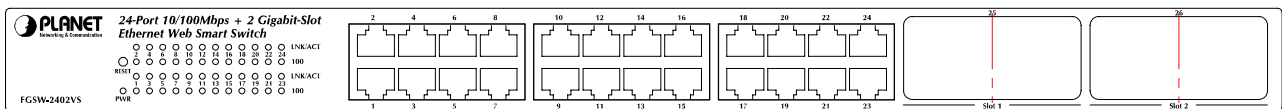


Figure 2-1: FGSW-2402VS Switch front panel

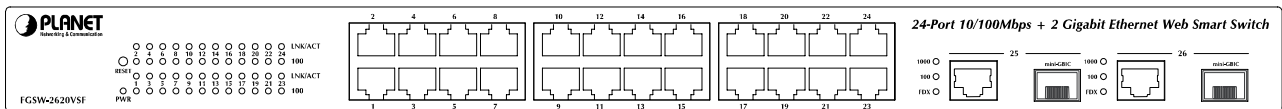


Figure 2-2: FGSW-2620VSF Switch front panel

#### 2.1.1 LED indicators

##### System

LED	Color	Function
PWR	Green	Lights to indicate that the Switch has power.

##### Per 10/100Mbps port

LED	Color	Function
LNK/ACT	Green	Lights to indicate the link through that port is successfully established.
100	Orange	Lights to indicate the port is running in 100Mbps speed.

##### Per 10/100/1000Base-T port /SFP interfaces (FGSW-2620VSF only)

LED	Color	Function
LNK/ACT 1000	Green	Lit: indicate that the port is operating at 1000Mbps. Off: indicate that the port is operating at 10Mbps or 100Mbps. Blink: indicate that the switch is actively sending or receiving data over that port.
LNK/ACT 100	Green	Lit: indicate that the port is operating at 100Mbps. Off: indicate that the port is operating at 10Mbps or 1000Mbps. Blink: indicate that the switch is actively sending or receiving data over that port.
FDX	Green	Lit: indicate that the port is operating at full-duplex mode. Off: indicate that the port is operating at half-duplex mode.

 **Notice:**

1. Press the RESET button once. The Web Smart Switch will reboot automatically.
2. Press the RESET button for 5 seconds. The Web Smart Switch will back to the factory default mode; the entire configuration will be erased.
3. The FGSW-2402VSv2 must work with **MII-V series module** for 100Base-FX fiber connection.
3. The 2 Gigabit TP/SFP combo ports are shared with port 25/26 of FGSW-2620VSF. Either of them can operate at the same time.

## 2.2 Rear Panel

The rear panel of the Web Smart Switch indicates an AC inlet power socket, which accepts input power from 100 to 240VAC, 50-60Hz.



**Figure 2-3:** FGSW-2402VS/FGSW-2620VSF Switch rear panel

 **Power Notice:**

1. The device is a power-required device, it means, it will not work till it is powered. If your networks should active all the time, please consider using UPS (Uninterrupted Power Supply) for your device. It will prevent you from network data loss or network downtime.
2. In some area, installing a surge suppression device may also help to protect your Web Smart Switch from being damaged by unregulated surge or current to the Web Smart Switch.

## 2.3 Hardware Installation

This part describes how to install your Web Smart Ethernet Switch and make connections to the Switch. Please read the following topics and perform the procedures in the order being presented. To install your Web Smart Switch on a desktop or shelf, simply completed the following steps.

### 2.3.1 Desktop Installation

To install Web Smart Switch on a desktop or shelf, simply completed the following steps:

Step 1: Attached the rubber feet to the recessed areas on the bottom of the Web Smart Switch.

Step 2: Place the Web Smart Switch on a desktop or shelf near an AC power source.

Step 3: Keep enough ventilation space between the Web Smart Switch and the surrounding objects.

 **Notice:**

When choosing a location, please keep in mind the environmental restrictions discussed in Chapter 1, Section 4, Specification.

Step 4: Connect your Switch to network devices.

- A. Connect one end of a standard network cable to the 10/100 RJ-45 ports on the front of the Web Smart Switch.
- B. Connect the other end of the cable to the network devices such as printer servers, workstations or routers...etc.

 **Notice:**

Connection to the Web Smart Switch requires UTP Category 5 network cabling with RJ-45 tips. For more information, please see the Cabling Specification in **Appendix A**.

Step 5: Supply power to the Web Smart Switch.

- A. Connect one end of the power cable to the Web Smart Switch.
- B. Connect the power plug of the power cable to a standard wall outlet then power on the Web Smart Switch.

When the Web Smart Switch receives power, the Power LED should remain solid Green.

### 2.3.2 Rack Mounting



To install the Web Smart Switch in a **19-inch** standard rack, follow the instructions described below.

Step 1: Place your Web Smart Switch on a hard flat surface, with the front panel positioned towards your front side.

Step 2: Attach a rack-mount bracket to each side of the Web Smart Switch with supplied screws attached to the package. [Figure 2-4](#) shows how to attach brackets to one side of the Web Smart Switch.



**Figure 2-4** Attaching the brackets to the Web Smart Switch

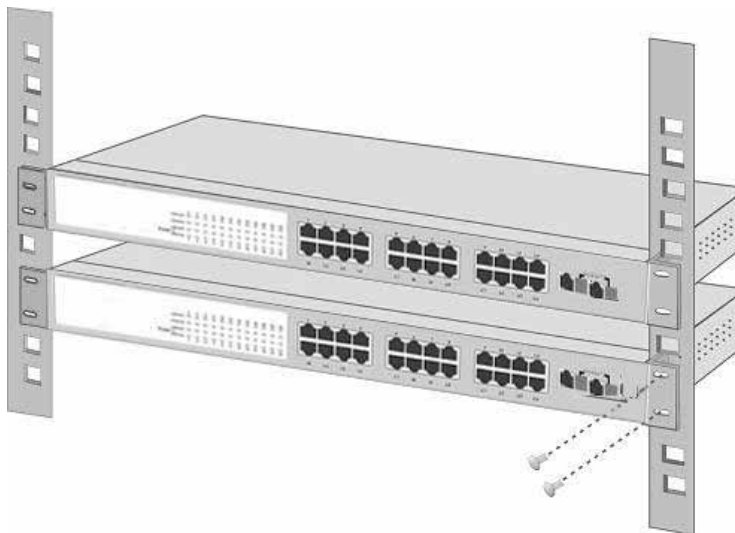
**Caution:**

You must use the screws supplied with the mounting brackets. Damage caused to the parts by using incorrect screws would invalidate your warranty.

Step 3: Secure the brackets tightly.

Step 4: Follow the same steps to attach the second bracket to the opposite side.

Step 5: After the brackets are attached to the Web Smart Switch, use suitable screws to securely attach the brackets to the rack, as shown in [Figure 2-5](#).



**Figure 2-5** Mounting the Web Smart Switch in a Rack

Step 6: Proceed with the steps 4 and steps 5 of section **2.3.1 Desktop Installation** to connect the network cabling and supply power to your Web Smart Switch.

## 3. SWITCH MANAGEMENT

This chapter describes how to manage the Web Smart Switch. Topics include:

- Overview
- Management method
- Logging on to the Web Smart Switch

### 3.1 Overview

The Web Smart Switch provides a user-friendly, web interface. Using this interface, you can perform various switch configuration and management activities, including:

Please refer to the following Chapter 4 for the details.

### 3.2 Management Method

User can manage the Web Smart Switch by Web Management via a network or dial-up connection.

#### 3.2.1 Web Management

You can manage the Web Smart Switch remotely by having a remote host with web browser, such as Microsoft Internet Explorer or Netscape Navigator.

Using this management method:

The Web Smart Switch must have an Internet Protocol (IP) address accessible for the remote host.

### 3.3 Logging on to the FGSW-2402VS/FGSW-2620VSF

When you log on to the Web Smart Switch Web interface for the first time, a sign-on string appears and you are prompted for a Web login username and password.



The factory default login username and password is **admin**.

**Notice:**

1. For security reason, please change and memorize the new password after this first setup.
2. Only accept command in lowercase letter under Web interface.

## 4. WEB MANAGEMENT

To modify your PC's IP domain to the same with Web Smart Switch then use the default IP address (**192.168.0.100**) to remote configure Web Smart Switch through the **Web** interface.

 **Notice:**

The following section will base on the console screens of FGSW-2620VSF, for FGSW-2402VS the display will be the same to FGSW-2620VSF.

### 4.1 Login in to the Switch

To access the Web-browser interface you must first enter the user name and password, the default user name and password is "**admin**". You will see the following screen comes out on the Web browser program:



**Figure 4-1** Web login screen

After the User name and Password is entered, you will see the web main menu screen.



Figure 4-2 Web main menu screen

## 4-2 Port Status

This section provides current status of each port from Web Smart Switch, the screen in Figure 4-3 appears and table 4-1 describes the port status object of Web Smart Switch.



Figure 4-3 Port Status Web Page screen

Object	Description
Port	Indicate port 1 to port 26.
Enable	Display the port <b>Disable</b> or <b>Enable</b> state of each port on Web Smart Switch.
Link Status	The state of the link, indicating a valid link partner device. " <b>Up</b> " means a device is successful connected to the port. " <b>Down</b> " means no device is connected.
Spd/Dpx	Display the <b>Speed duplex mode</b> of each port on Web Smart Switch.
Flow Control	Display the flow control <b>On</b> or <b>Off</b> state of each port on Web Smart Switch.
Refresh button	Press this button for refresh current status of each port on Web Smart Switch.

Table 4-1 Descriptions of the Port Status screen Objects

### 4-3 Port Configuration

This section introduces detail settings of per port on Web Smart Switch; the screen in Figure 4-4 & 4-5 appears and table 4-2 descriptions the Port Configuration objects of Web Smart Switch.



Figure 4-4 Port Configuration Web Page screen

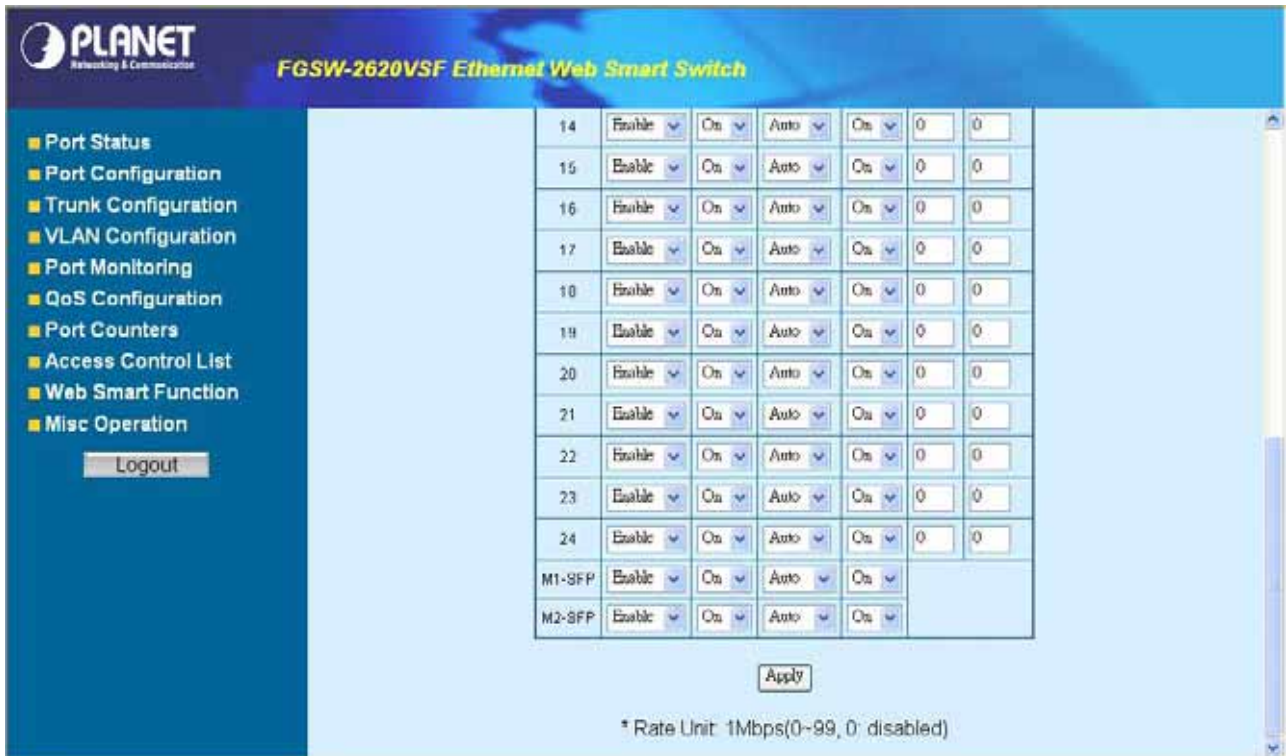


Figure 4-5 Port Configuration Web Page screen

Object	Description
<b>Port</b>	Indicate port 1 to port 26.
<b>Enable</b>	Per port <b>Disable</b> or <b>Enable</b> on Web Smart Switch.
<b>Auto</b>	Per port Disable ( <b>Off</b> ) or enable ( <b>On</b> ) Auto negotiation on Web Smart Switch.
<b>Spd/Dpx</b>	Adjust per port speed duplex mode on Web Smart Switch; the available options are <b>Auto, 100F, 100H, 10F, 10H. Default mode is Auto.</b>
<b>Flow Control</b>	Per port Flow control Disable ( <b>Off</b> ) or enable ( <b>On</b> ) on Web Smart Switch. <b>Default mode is On.</b>
<b>InRate</b>	Input the value of packet rate sent from the connected port to this port must enable the flow control feature of this port for the function to work normally. The available value ranges from 1 to 99 and <b>rate unit: 1Mbps.</b>
<b>OutRate</b>	Input the value of packet rate sent from this port to the connected port. The available value ranges from 1 to 99 and <b>rate unit: 1Mbps.</b>
<b>Apply button</b>	Press this button for save current configuration of each port on Web Smart Switch.

Table 4-2 Descriptions of the Port Configuration screen Objects



## 4-4 Trunk configuration

This function allows to configuring the trunk function. It provides up to 7 trunk groups and each trunk group provides 2 to 8 member ports. Please check the member port from “Normal” to 7 trunk groups and the screen in [Figure 4-6 & 4-7](#) appears.



Figure 4-6 Trunk Configuration Web Page screen



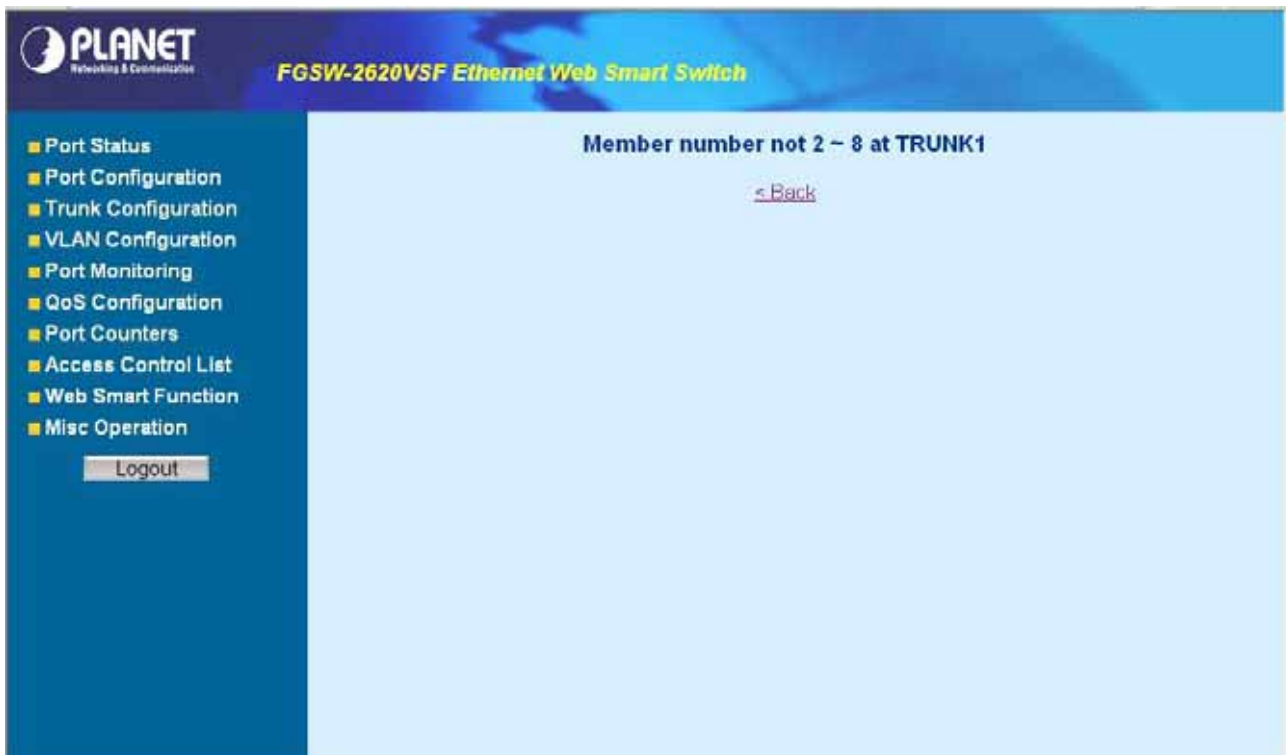
Figure 4-7 Trunk Configuration Web Page screen

After setup completed, please press “Apply” button to take effect and the screen in [Figure 4-8](#) appears.



**Figure 4-8** Trunk Configuration Web Page screen

Please press “**Back**” for return to Trunk configuration screen for further configuration. If the member port from each trunk group is out of range or less than 2 ports than the following screen appears.



**Figure 4-9** Trunk Configuration Web Page screen

Please press “**Back**” for return to Trunk configuration screen for adds other trunk group.



## 4-5 VLAN configuration

A Virtual LAN (VLAN) is a logical network grouping that limits the broadcast domain. It allows you to isolate network traffic so only members of the VLAN receive traffic from the same VLAN members. The Web Smart Switch supports 26 port-based VLAN groups. In the default configuration with VLAN disable, the screen in Figure 4-10 appears.

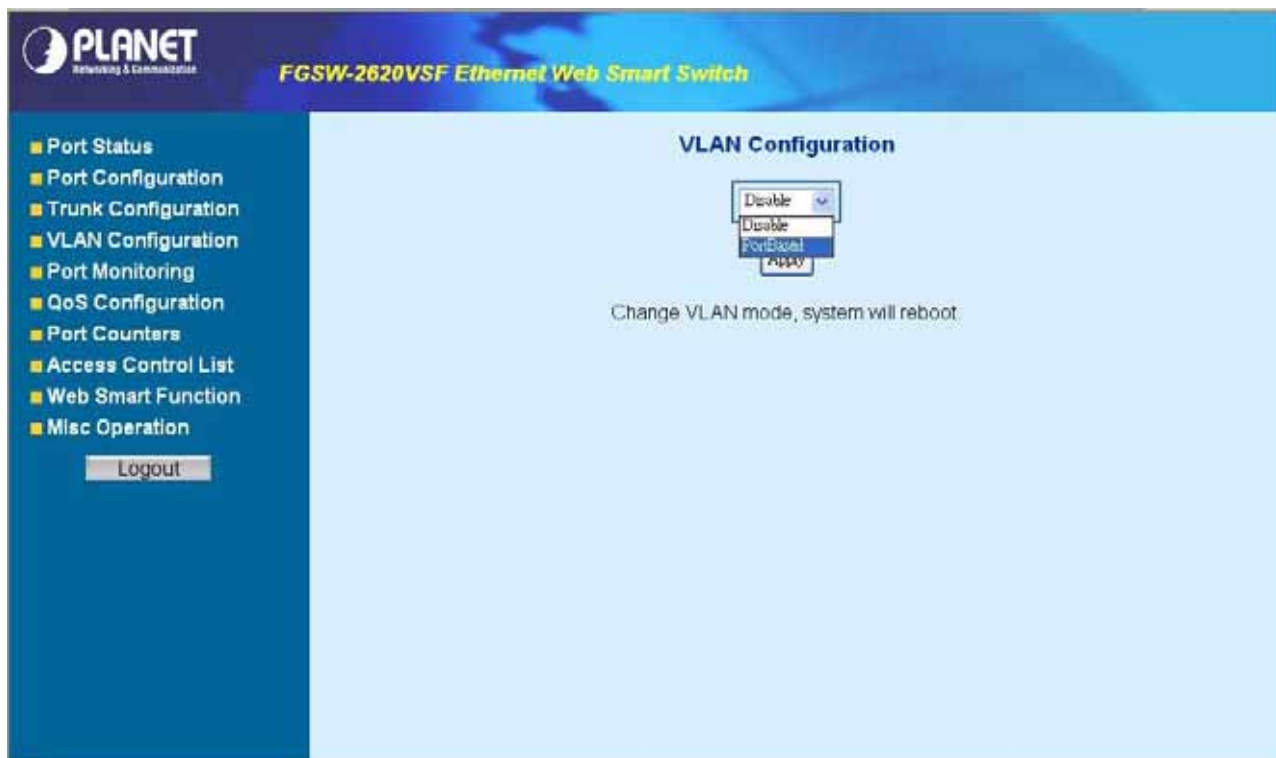
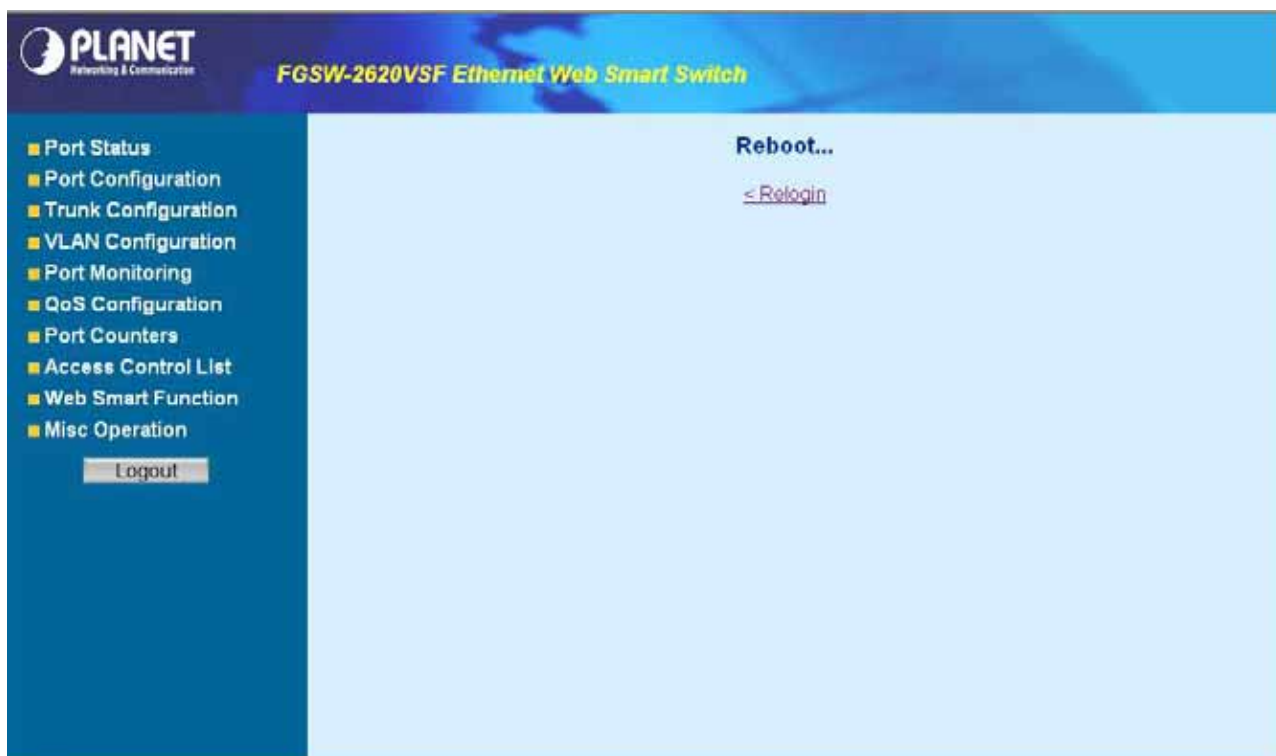


Figure 4-10 Port-based VLAN Setting Web Page screen

### 4.5.1 Enable port-based VLAN function and add a port-based VLAN group

Select **“PortBased”** and press **“Apply”** button, to enable the port-based VLAN function then the Web Smart Switch will reboot for take affect. The screen in Figure 4-11 appears.



**Figure 4-11** Port-based VLAN Setting Web Page screen

Press **“Relogin”** to re-login the Web Smart Switch and the screen in [Figure 4-12](#) appears.



**Figure 4-12** Port-based VLAN Setting Web Page screen

After login web interface of Web Smart Switch and choose VLAN configuration, the screen in [Figure 4-13](#) appears.



**Figure 4-13** Port-based VLAN Configuration Web Page screen

Press “AddNew” button to add a port-based VLAN group and setup procedure is shown as below:

1. Input a VLAN group ID and **available range is 1-4094**.
2. Select specific port as member port and the screen in [Figure 4-14](#) appears.
3. After setup completed, please press “Apply” button to take effect and the screen in [Figure 4-15](#) appears.
4. Please press “Back” for return to VLAN configuration screen to add other VLAN group, the screen in [Figure 4-16](#) appears.



Figure 4-14 Port-based VLAN Setting Web Page screen



Figure 4-15 Port-based VLAN Setting Web Page screen



Figure 4-16 Port-based VLAN Setting Web Page screen

#### 4.5.2 Edit existence port-based VLAN group

Click **existence VLAN group ID** to edit existence port-based VLAN group, the edit procedure is shown as below:

1. Select specific port as member port and the screen in [Figure 4-17](#) appears.
2. After setup completed, please press “**Apply**” button to take effect and the screen in [Figure 4-18](#) appears.
3. Please press “**Back**” for return to VLAN configuration screen to continue VLAN configuration.



Figure 4-17 Edit Port-based VLAN Setting Web Page screen

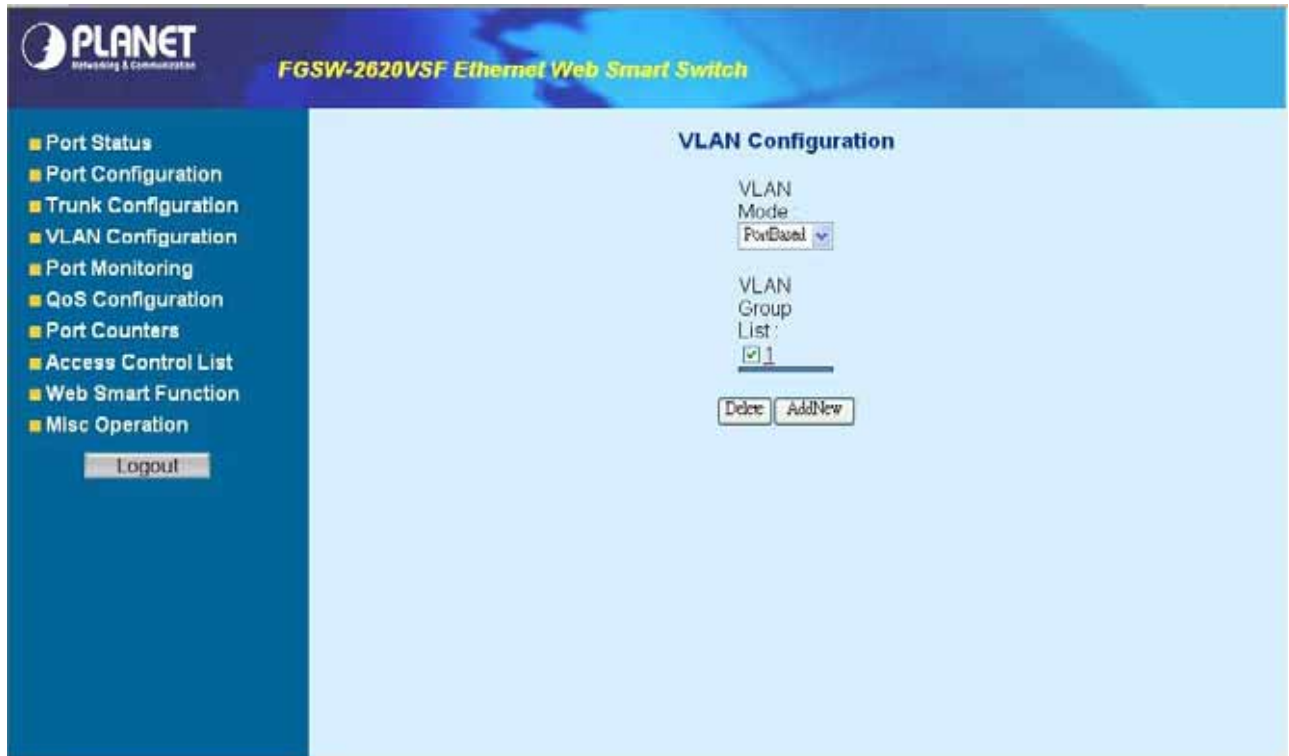


Figure 4-18 Edit Port-based VLAN Setting Web Page screen

### 4.5.3 Delete existence port-based VLAN group

The port-based VLAN group delete procedure is shown as below:

1. Check **existence VLAN group ID** and the screen in [Figure 4-19](#) appears.
2. Press **“Delete”** button to delete existence port-based VLAN group.
3. Then the **“Delete all checked groups”** window appears, please press **“OK”** to continue the delete VLAN group procedure and the screen in [Figure 4-20](#) appears.
4. Please press **“Back”** for return to VLAN configuration screen to continue VLAN configuration. The screen in [Figure 4-21 & 4-22](#) appears.



**Figure 4-19** Delete Port-based VLAN group Web Page screen



**Figure 4-20** Delete Port-based VLAN group Web Page screen



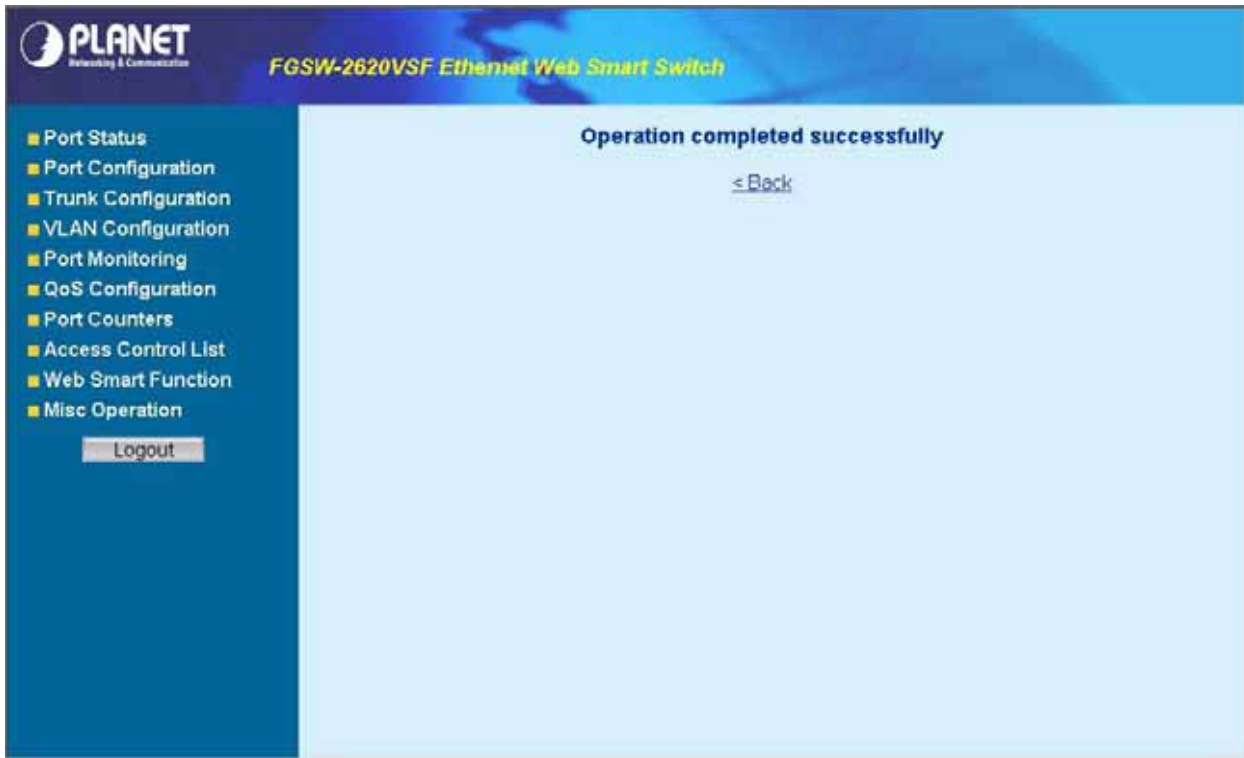


Figure 4-21 Delete Port-based VLAN group Web Page screen



Figure 4-22 Port-based VLAN group Web Page screen

#### 4.5.4 Disable port-based VLAN function

Select “**Disable**” and pop window appears, press “**OK**” to disable the port-based VLAN function then the Web Smart Switch will reboot for take affect. The screen in [Figure 4-23 & 4-24 & 4-25 & 4-26 & 4-27](#) appears.



Figure 4-23 Disable Port-based VLAN function Web Page screen

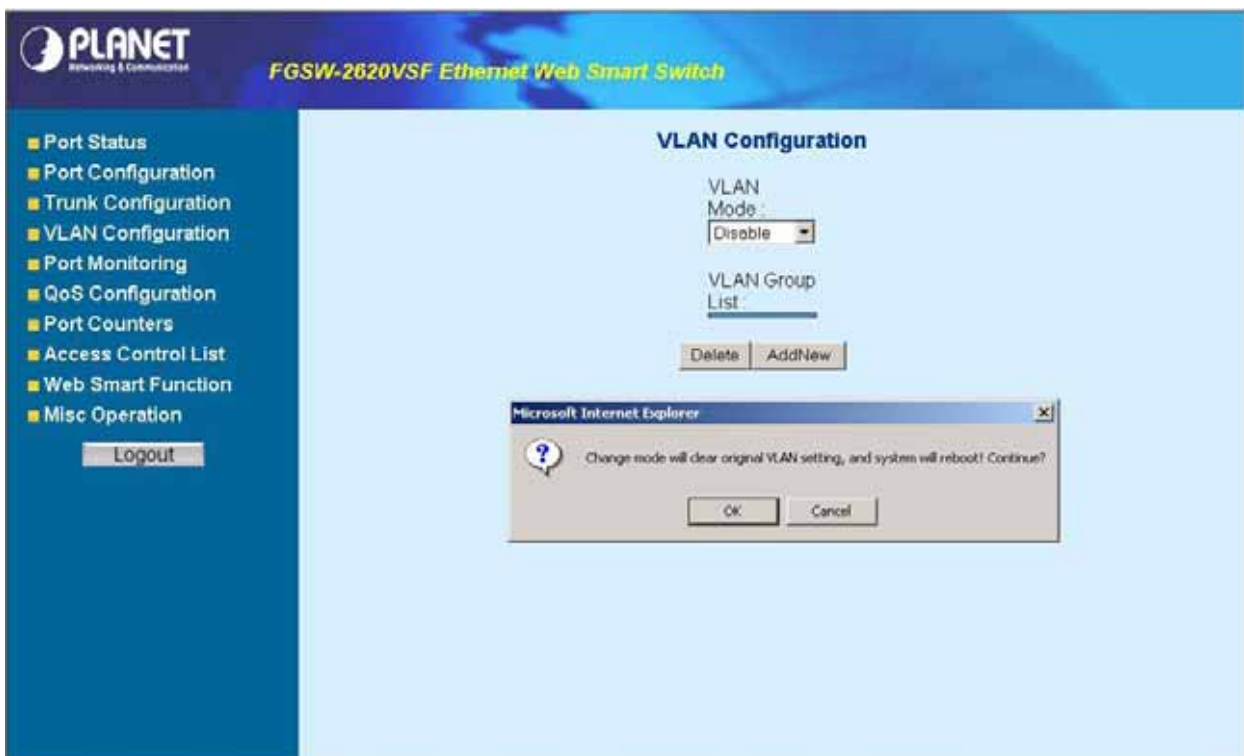


Figure 4-24 Disable Port-based VLAN function Web Page screen





Figure 4-25 Disable Port-based VLAN function Web Page screen



Figure 4-26 Disable Port-based VLAN function Web Page screen



Figure 4-27 Disable Port-based VLAN function Web Page screen

## 4-6 Port Monitoring

This function provide to monitoring network traffic that forwards a copy of each incoming or outgoing packet from one port of a network Switch to another port where the packet can be studied. It enables the manager to keep close track of switch performance and alter it if necessary. The screen in [Figure 4-28](#) appears and table 4-3 describes the port Monitoring object of Web Smart Switch.



Figure 4-28 Port Monitoring Web Page screen

Object	Description
<b>Port Monitoring Mode</b>	Provide <b>Disable, RX, TX</b> and <b>RX &amp; TX</b> different modes for port Monitoring function. Default mode is <b>Disable</b> .
<b>Monitoring Port</b>	The monitoring port can be used to see all monitor port traffic. It can connect monitoring port to LAN analyzer or Netxray.
<b>Monitored Port</b>	The monitored port that want to monitor. All monitor port traffic will be copied to mirror port. It can select 1 monitored port in the Web Smart switch.
<b>Apply button</b>	Press this button for save current port monitoring configuration on Web Smart Switch.

Table 4-3 Descriptions of the Port Monitoring screen Objects

## 4-7 QoS Configuration

This function provides QoS Configuration of Web Smart Switch, the screen in [Figure 4-29](#) appears and table 4-4 describes the QoS Configuration of Web Smart Switch.



Figure 4-29 QoS Configuration Web Page screen

Object	Description
<b>QoS Mode</b>	Provide different modes for QoS Configuration, the available options are shown as below: <b>Disable QoS Priority,</b> <b>High Empty Then Low,</b> <b>Highest:secHigh:SecLow:Lowest=8:4:2:1</b> <b>Highest:secHigh:SecLow:Lowest=15:7:3:1</b> <b>Highest:secHigh:SecLow:Lowest=15:10:5:1</b> Default mode is <b>Highest:secHigh:SecLow:Lowest=8:4:2:1</b> , the screen in <a href="#">Figure 4-30</a> appears.
<b>Static Port Ingress Priority</b>	Allow to assign Ingress priority on each port of Web Smart Switch, the available options are <b>OFF</b> and <b>0-7</b> . Default mode is <b>0</b> and the screen in <a href="#">Figure 4-31</a> appears.
<b>802.1p Priority [7-0]</b>	Allow assign high and low on each priority, the available options are shown as below: <b>Lowest, SecLow, SecHigh, Highest</b> , the screen in <a href="#">Figure 4-32</a> appears.
<b>Apply button</b>	Press this button for save current QoS configuration of each port on Web Smart Switch.

Table 4-4 Descriptions of the QoS Configuration screen Objects



Figure 4-30 QoS Configuration Web Page screen

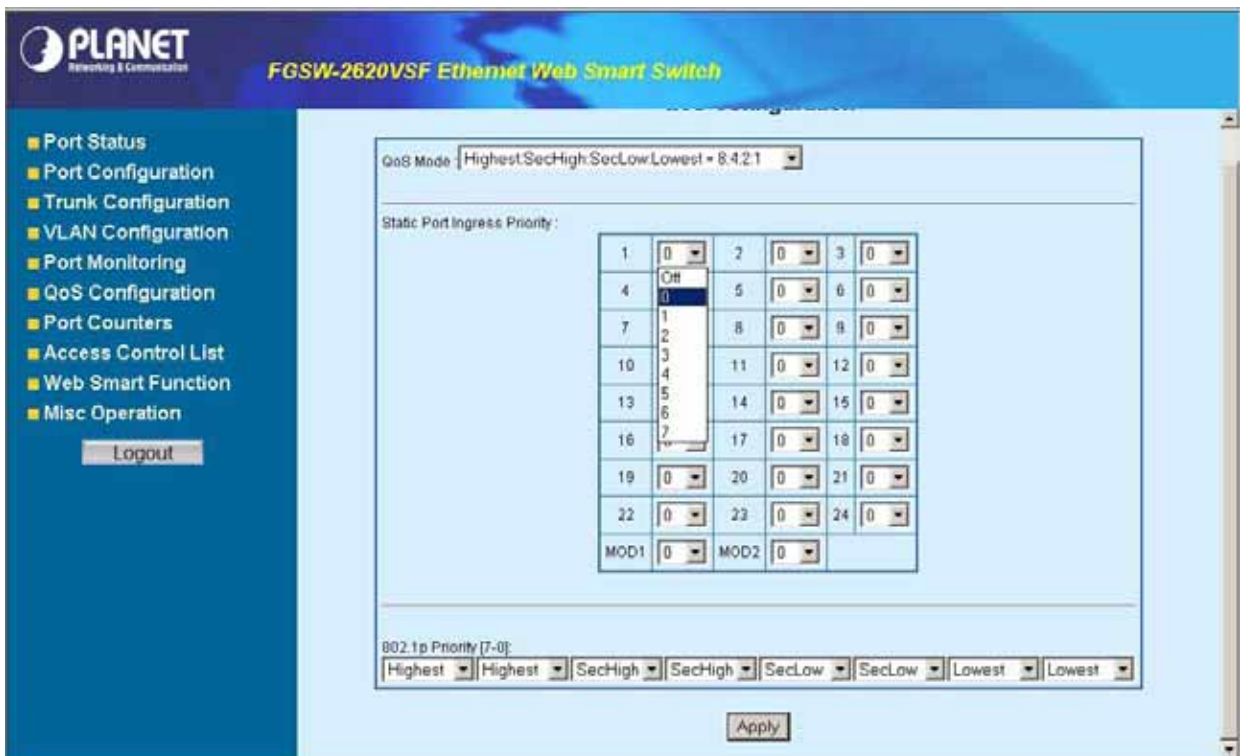


Figure 4-31 QoS Configuration Web Page screen



Figure 4-32 QoS Configuration Web Page screen

## 4-8 Port counters

This function could provide you with an individual statistical counter; it is a useful page for administrator to monitor each port's usage condition. Also, it is helpful to troubleshooting network problems. The screen in [Figure 4-33 & 4-34](#) appears.



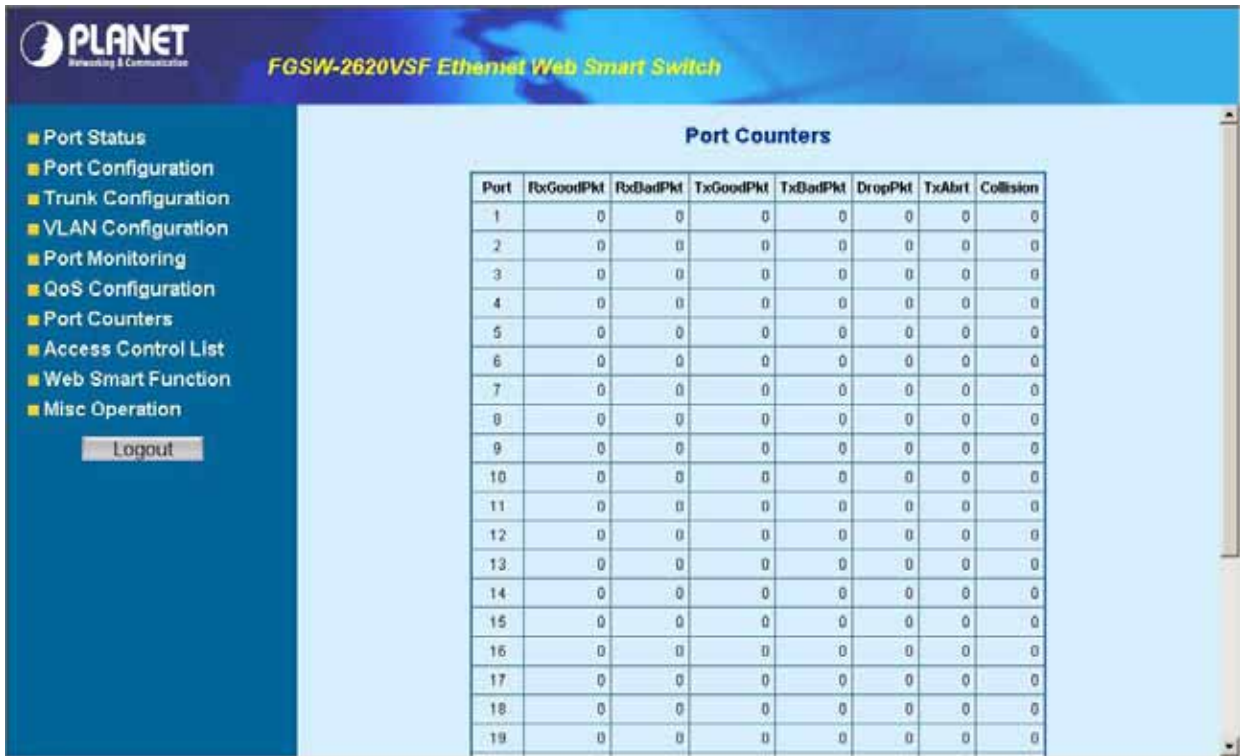


Figure 4-33 Port Counters Web Page screen



Figure 4-34 Port Counters Web Page screen

Press “ClearAllCnt” button to refresh current per port counters on Web Smart Switch.

## 4-9 Access Control List

The **Access Control List (ACL)** is a concept in [computer security](#) used to enforce [privilege separation](#). It is a means of determining the appropriate [access rights](#) to a given object depending on certain aspects of the [process](#) that is making the request, principally the process's [user](#) identifier. **Access Control List (ACL)** is a mechanism that implements access control for a system resource by listing the identities of the system entities that are permitted or denied to access the resource. The screen in following screen appears; table 4-5 descriptions the Access Control List of Web Smart Switch.

Figure 4-35 Access Control List (ACL) Web Page screen

Object	Description
<b>Group id</b>	Input a group ID and available range is 1-255.
<b>Action</b>	To assign “Permit” or “Deny” for Access Control List, the screen in <a href="#">Figure 4-36</a> appears.
<b>VLAN</b>	To choose VLAN type as “Any” or by “VID (1-4094)”, the screen in <a href="#">Figure 4-37</a> appears.
<b>Packet Type</b>	To choose Packet type as “IPv4” or by “Non-IPv4”, the screen in <a href="#">Figure 4-37</a> appears.
<b>IP Fragment</b>	To decide to “check” or “Uncheck” the IP fragment, the screen in <a href="#">Figure 4-38</a> appears.
<b>L4 Protocol</b>	Provide additional L4 protocol for security on Layer 4 level, the screen in <a href="#">Figure 4-39 &amp; 4-40 &amp; 4-41</a> appears.
<b>Current List</b>	Display “IPv4” or “Non-IPv4” ACL groups, maximum up to 16 groups and the screen in <a href="#">Figure 4-43</a> appears.
<b>Add button</b>	Press this button for add Access Control List group on Web Smart Switch, the screen in <a href="#">Figure 4-42 &amp; 4-43</a> appears.
<b>Del button</b>	Press this button for delete Access Control List group on Web Smart Switch, the screen in <a href="#">Figure 4-44 to 4-49</a> appears.

Table 4-5 Descriptions of the Access Control List (ACL) screen Objects



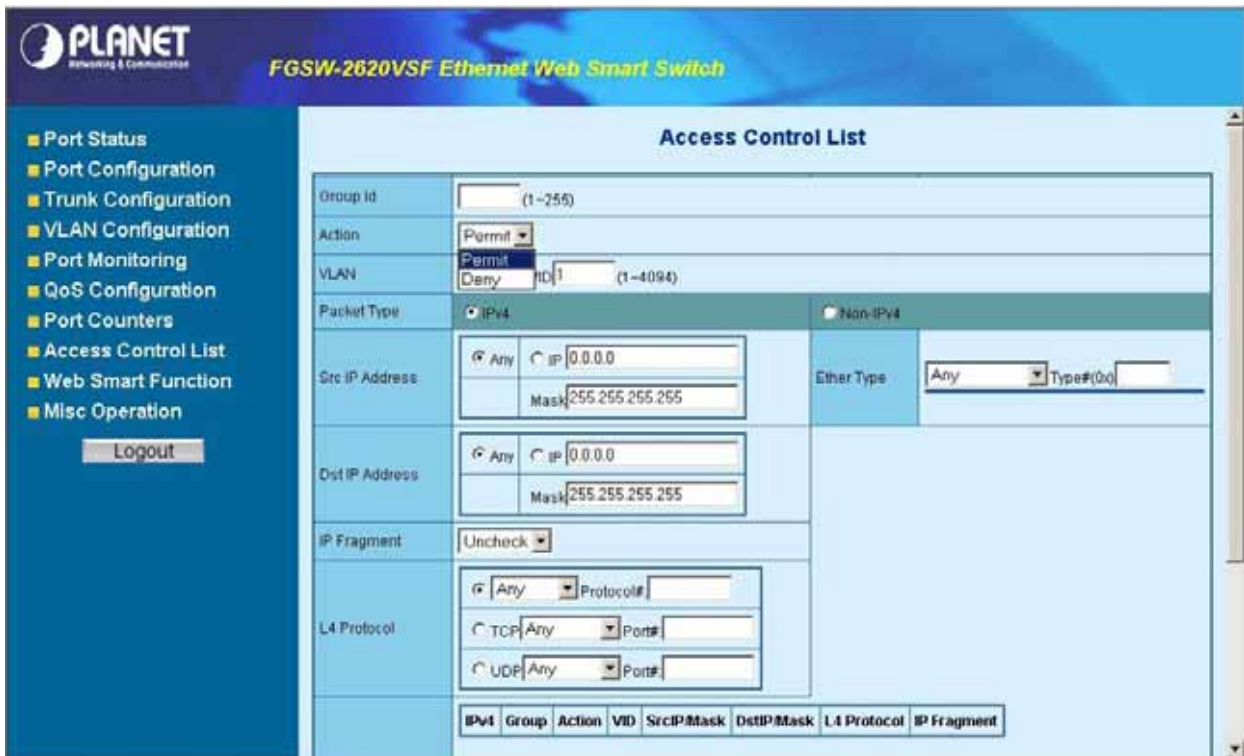


Figure 4-36 Access Control List (ACL) Web Page screen

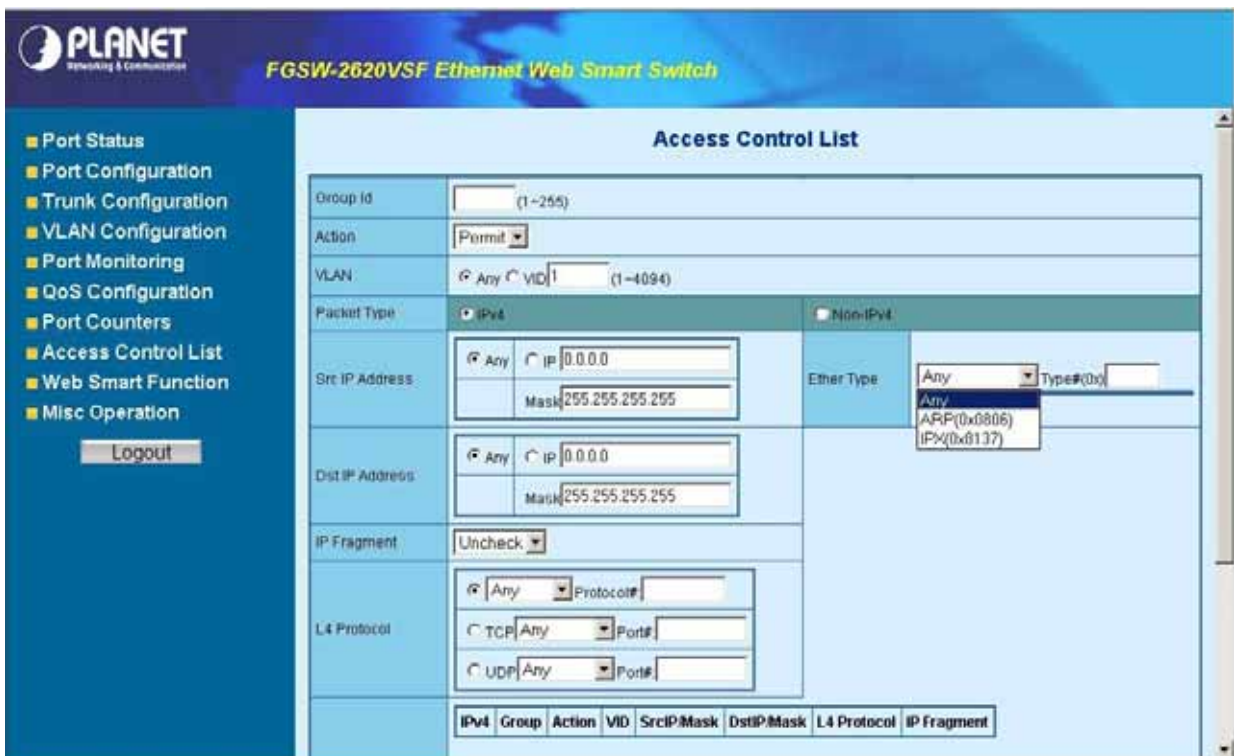


Figure 4-37 Access Control List (ACL) Web Page screen

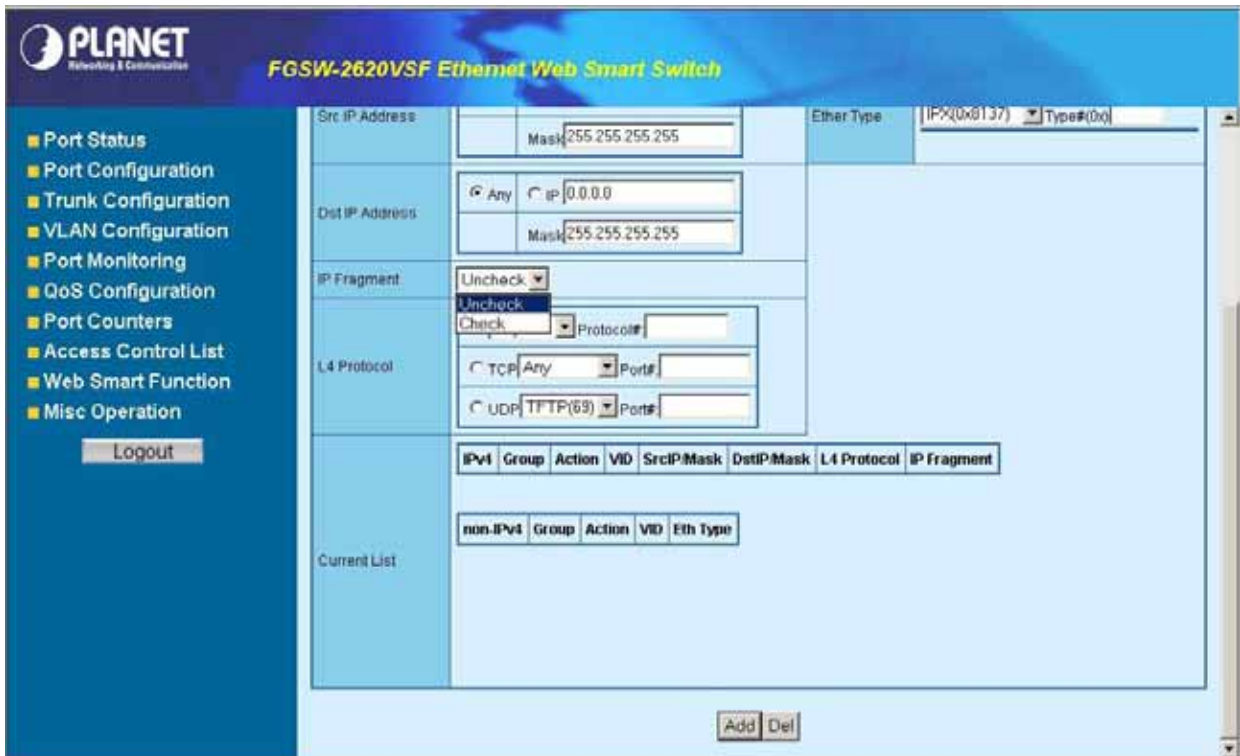


Figure 4-38 Access Control List (ACL) Web Page screen

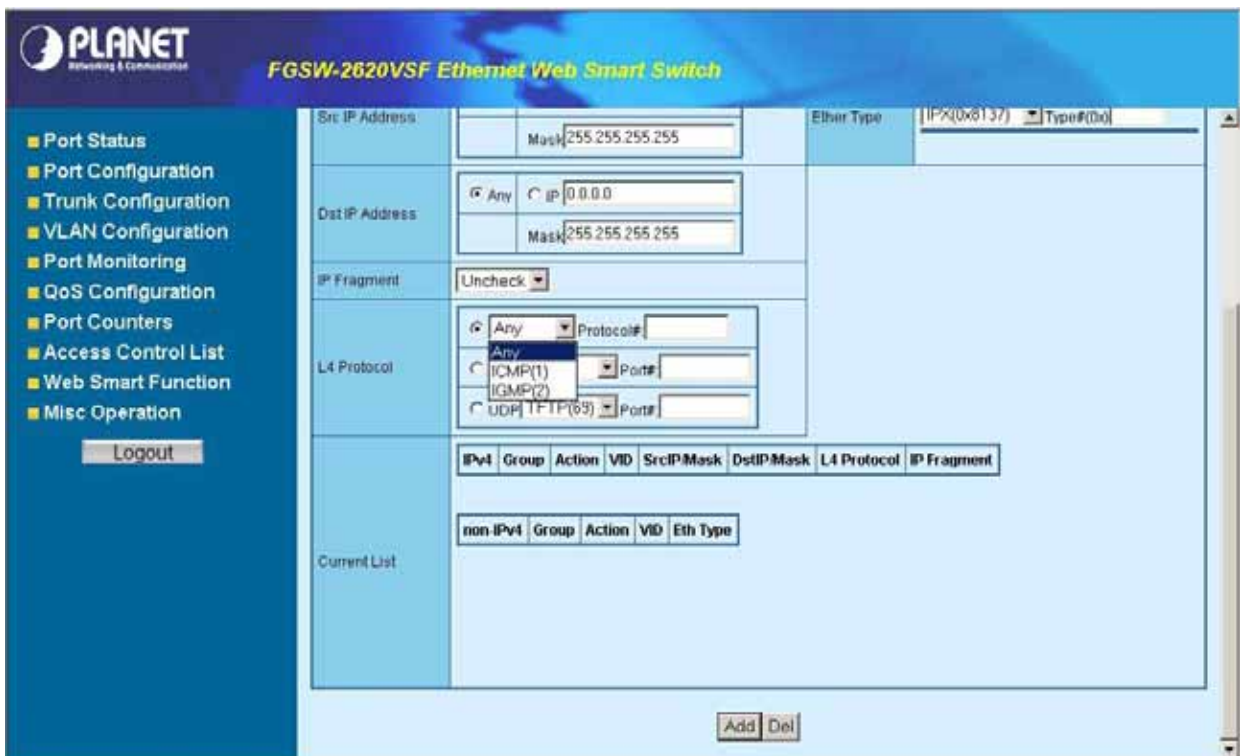


Figure 4-39 Access Control List (ACL) Web Page screen

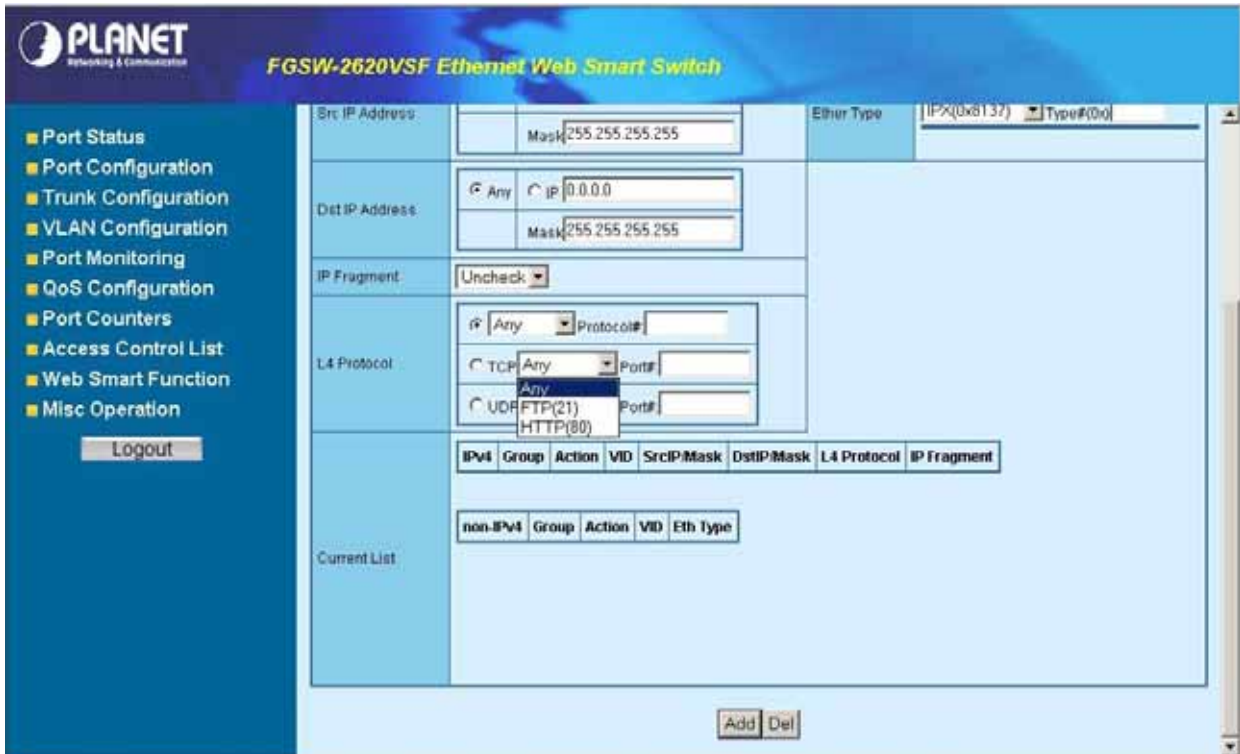


Figure 4-40 Access Control List (ACL) Web Page screen

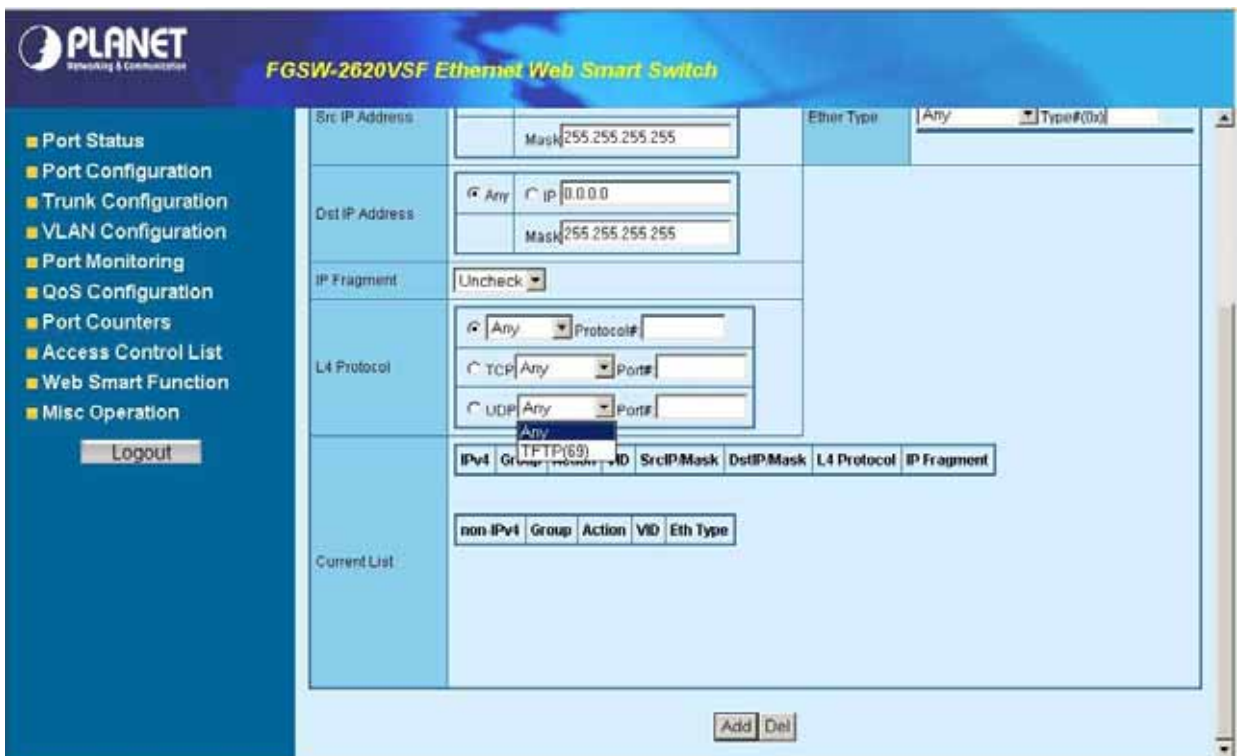


Figure 4-41 Access Control List (ACL) Web Page screen

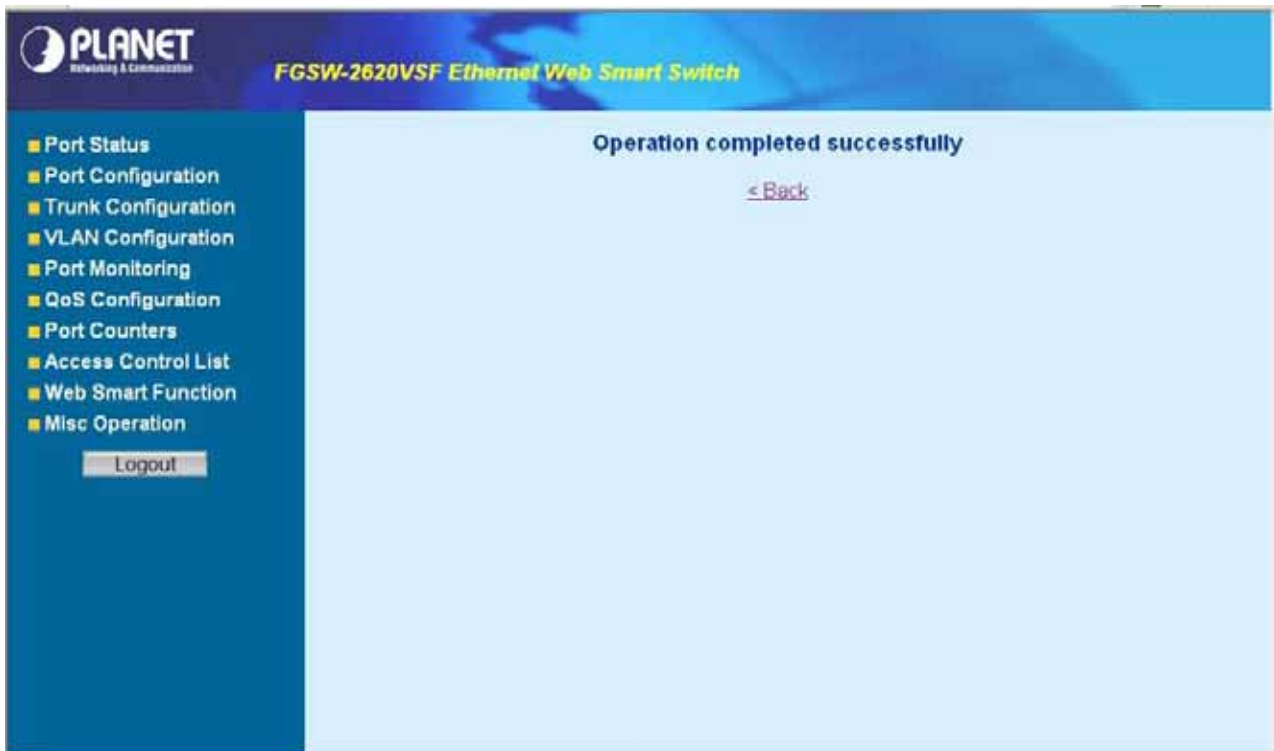


Figure 4-42 Access Control List (ACL) Web Page screen



Figure 4-43 Access Control List (ACL) Web Page screen



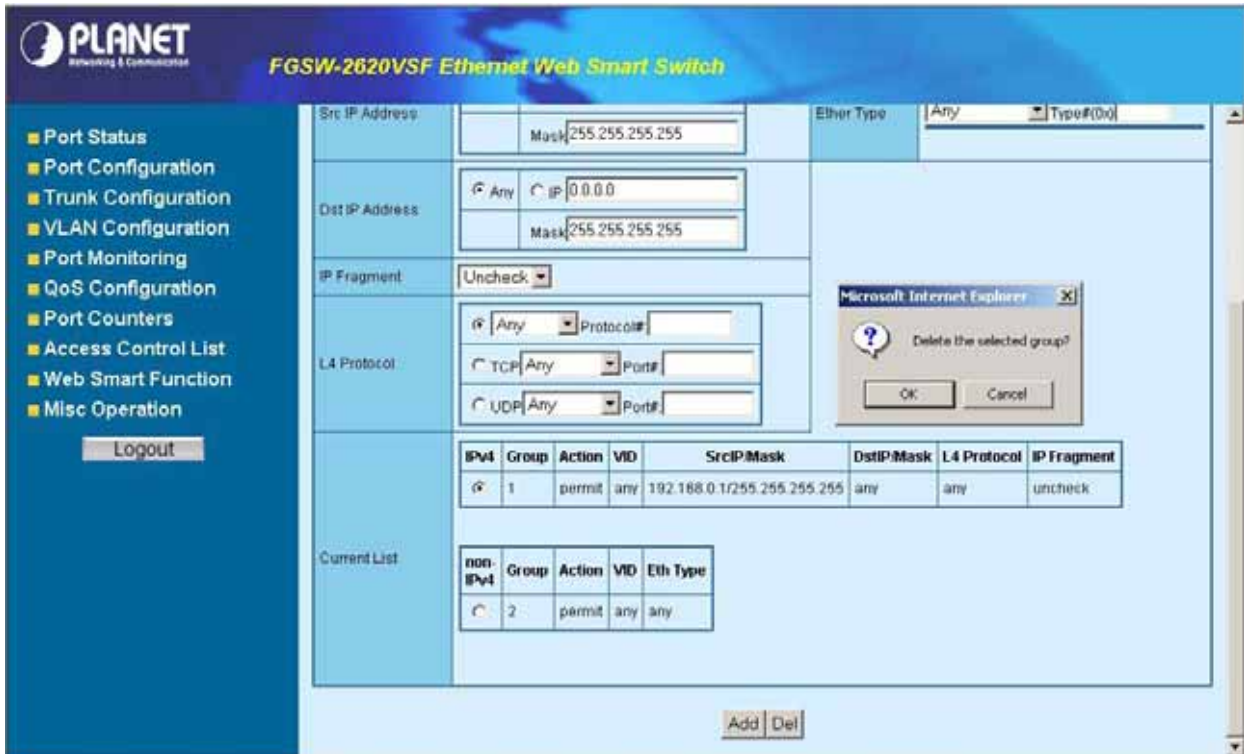


Figure 4-44 Access Control List (ACL) Web Page screen



Figure 4-45 Access Control List (ACL) Web Page screen

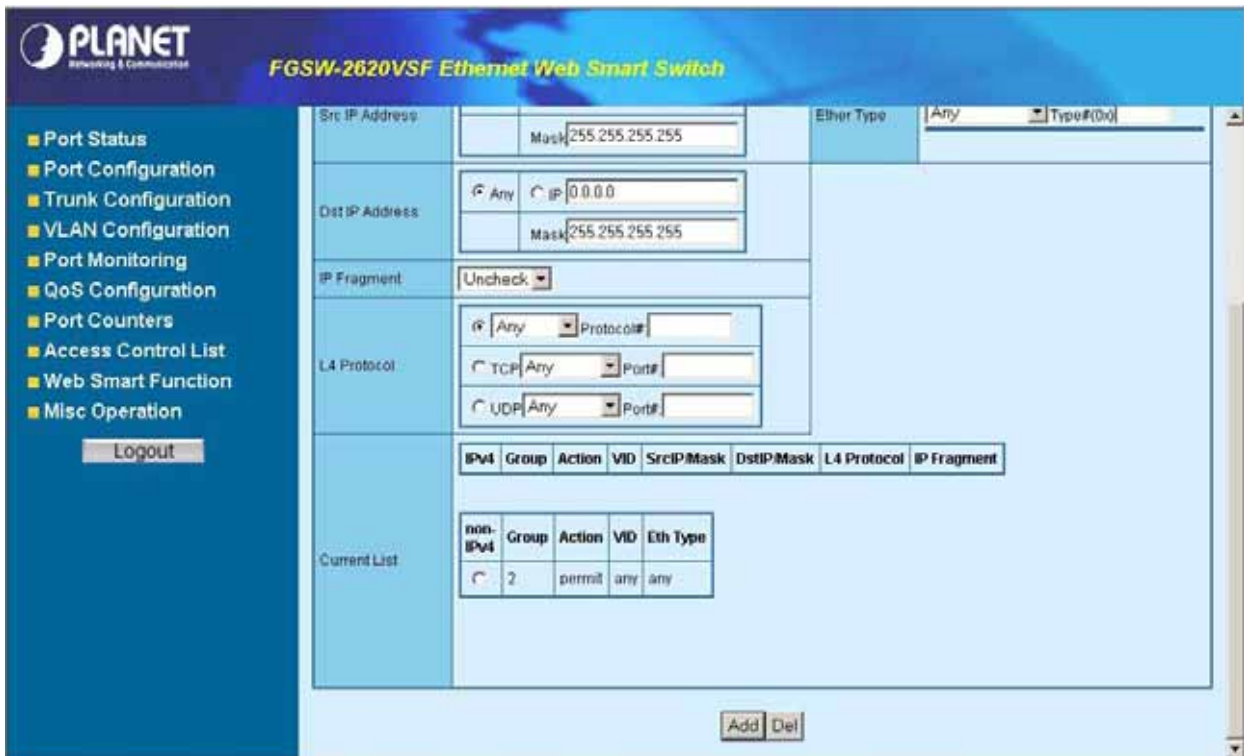


Figure 4-46 Access Control List (ACL) Web Page screen

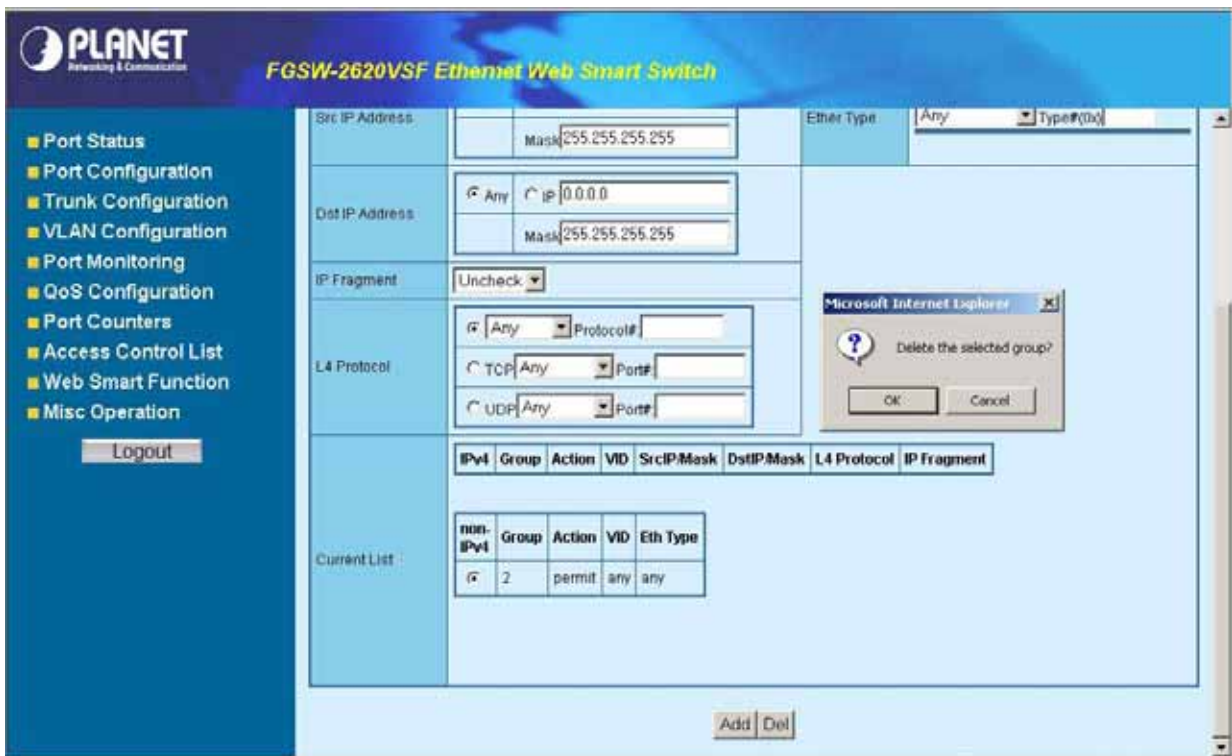


Figure 4-47 Access Control List (ACL) Web Page screen



Figure 4-48 Access Control List (ACL) Web Page screen

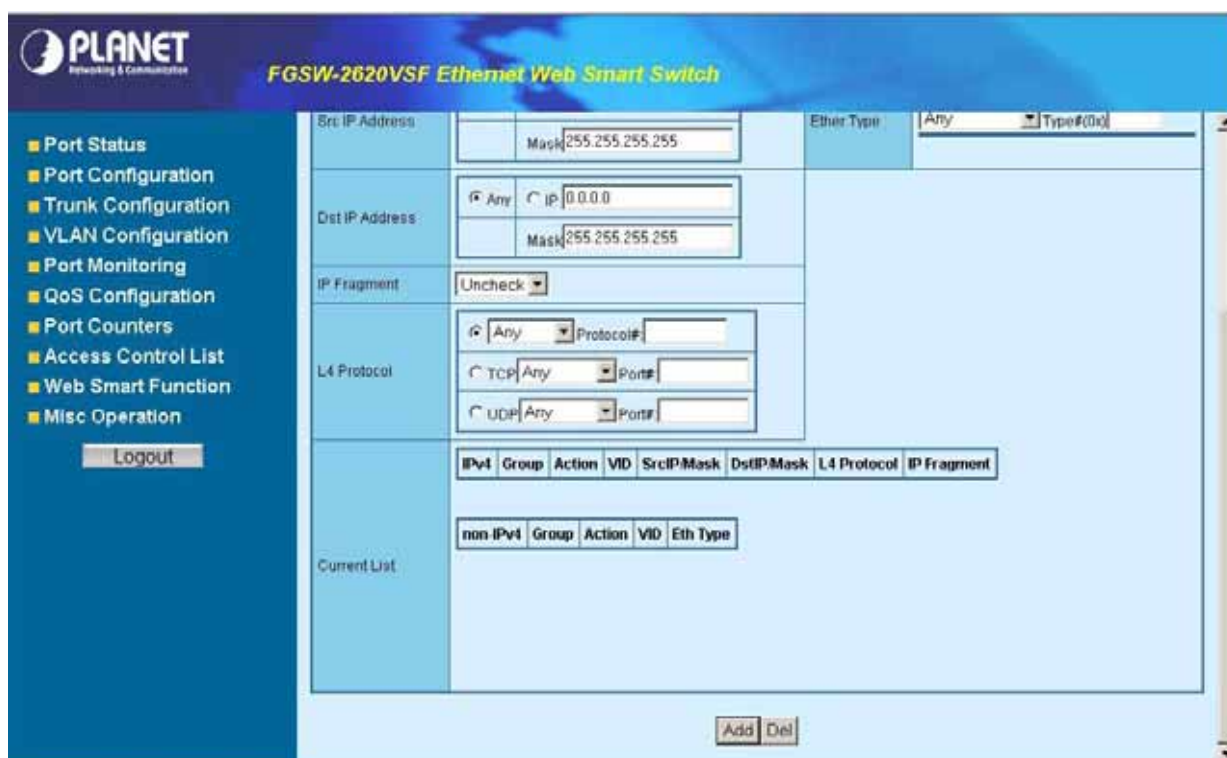


Figure 4-49 Access Control List (ACL) Web Page screen

## 4-10 Web Smart Function

This function could provide you to define device indicate connect to each port on Web Smart Switch, the screen in [Figure 4-50](#) appears.



**Figure 4-50** Web Smart Function Web Page screen

The available options are shown as below:

1. PC
2. PC+Voip
3. Switch
4. Router
5. AP
6. Server
7. Printer
8. Guest
9. Other

The screen in [Figure 4-51](#) appears and the setup procedure shown as below:

1. Choose a device from options of Select a port function, the screen in [Figure 4-51](#) appears.
2. Check the port that need to marked, the screen in [Figure 4-52](#) appears.
3. After setup completed, press “**Save**” to save current configuration, the screen in [Figure 4-53](#) appears.
4. Please press “**Back**” for return to Web Smart Function screen, the screen in [Figure 4-54](#) appears.



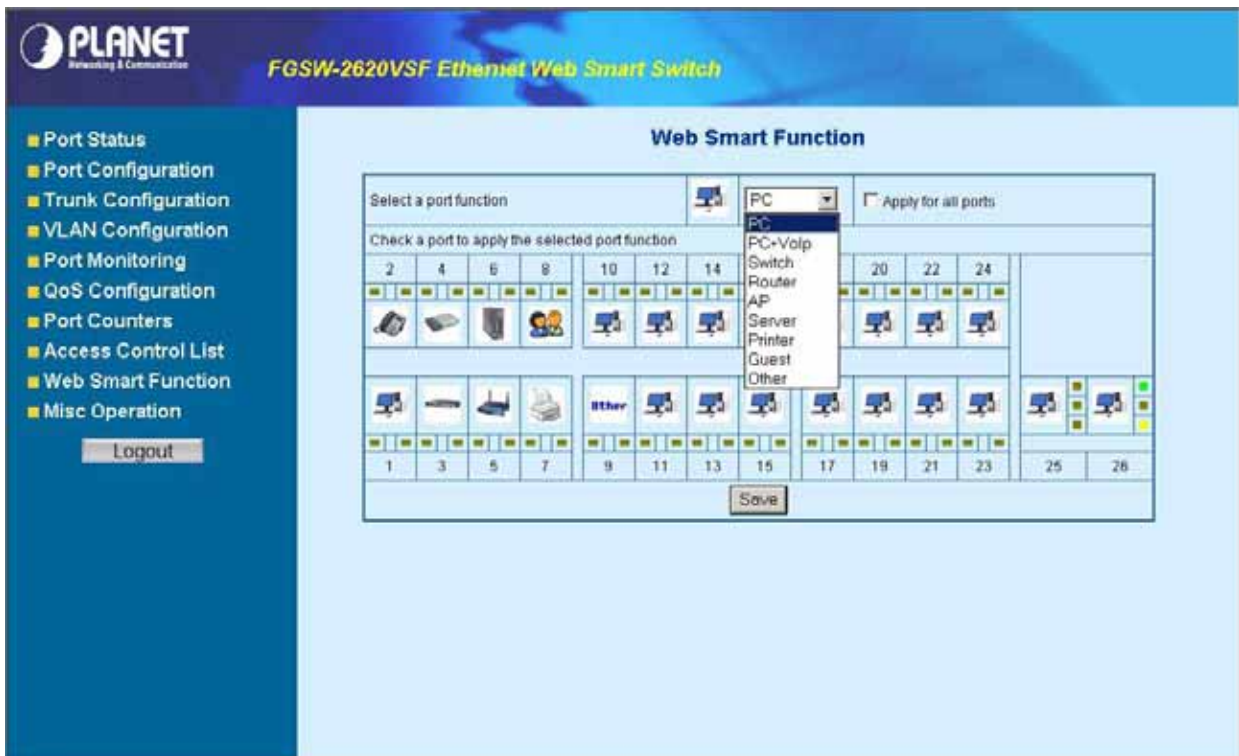


Figure 4-51 Web Smart Function Web Page screen



Figure 4-52 Web Smart Function Web Page screen



**Figure 4-53** Web Smart Function Web Page screen

This function also provides **Apply for all ports** option from Select a port function, the setup procedure shown as below:

1. Choose a device and check “**Apply for all ports**” from options of Select a port function, the screen in [Figure 4-54](#) appears.
2. Check any port then all port will be select; the screen in [Figure 4-55](#) appears.
3. After setup completed, press “**Save**” to save current configuration, the screen in [Figure 4-56](#) appears.
4. Please press “**Back**” for return to Web Smart Function screen, the screen in [Figure 4-57](#) appears.

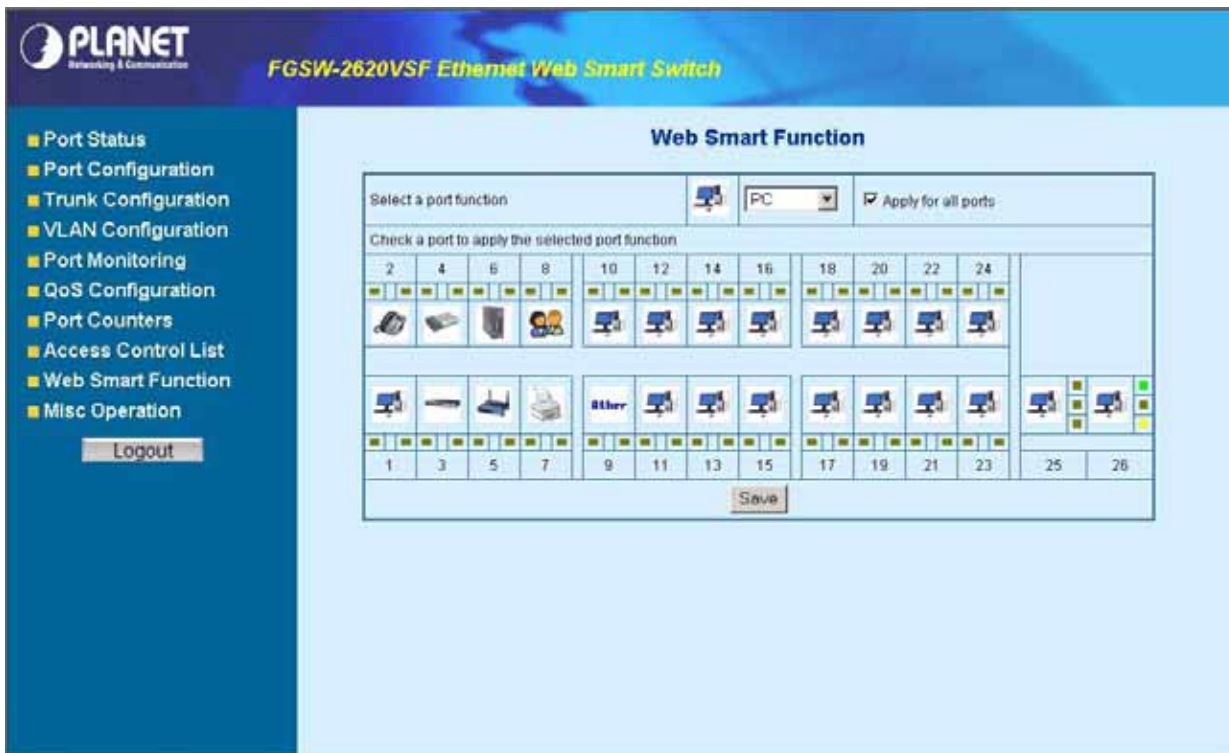


Figure 4-54 Web Smart Function Web Page screen

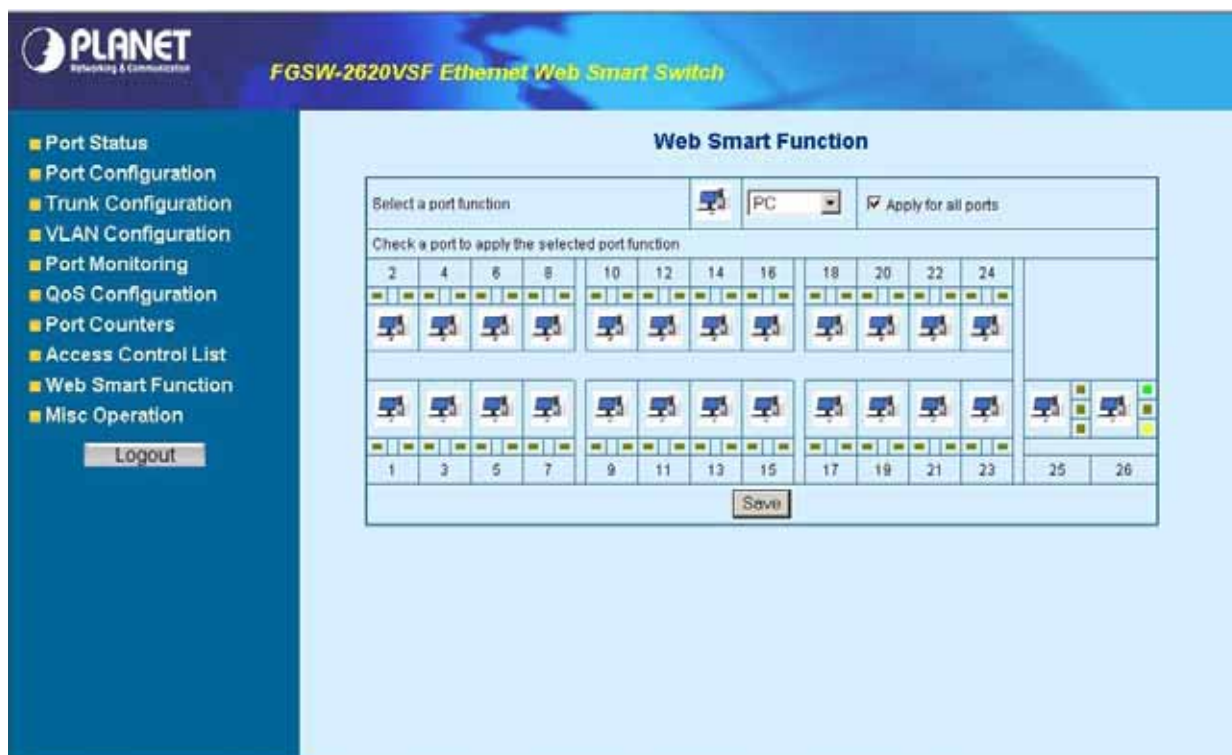


Figure 4-55 Web Smart Function Web Page screen



Figure 4-56 Web Smart Function Web Page screen



Figure 4-57 Web Smart Function Web Page screen



## 4-11 Misc Operation

This section provide Misc Operation of Web Smart Switch, the screen in [Figure 4-58](#) appears and table 4-6 descriptions the Misc Operation objects of Web Smart Switch.



**Figure 4-58** Misc Operation Web Page screen

Object	Description
<b>Switch Configuration</b>	Provide Advanced Switch Configuration and <b>available options are Broadcast Storm Filter. Collision Retry Forever. MAC Table Auto-Aging. MAC Table Hashing. Web Auto Logout Time.</b> Please refer to <b>section 4.11.1</b> for detail description.
<b>TFTP Firmware Update</b>	Provide firmware upgrade on Web Smart Switch; please refer to <b>section 4.11.2</b> for detail description.
<b>Password Setting</b>	Provide password setting on Web Smart Switch; please refer to <b>section 4.11.3</b> for detail description.
<b>IP Configuration</b>	Provide IP address configuration on Web Smart Switch; please refer to <b>section 4.11.4</b> for detail description.
<b>Factory Default</b>	Provide Factory Default function on Web Smart Switch; please refer to <b>section 4.11.5</b> for detail description.
<b>Reboot System</b>	Provide Reboot function on Web Smart Switch; please refer to <b>section 4.11.6</b> for detail description.
<b>System Information</b>	Display System Information on Web Smart Switch; please refer to <b>section 4.11.7</b> for detail description.

**Table 4-6** Descriptions of the Misc Operation screen Objects

### 4.11.1 Switch Configuration

Choose Switch Configuration from Misc Operation of Web Smart Switch( please see the [Figure 4-58](#) ) , the screen in [Figure 4-59](#) appears and table 4-7 descriptions the Switch Configuration from Misc Operation of Web Smart Switch.



**Figure 4-59** Switch Configuration Web Page screen

Object	Description
<b>Broadcast Storm Filter</b>	Provide Broadcast storm filter function and <b>available options are Off. 1/2. MAC 1/4. 1/8.1/16.</b> Default mode is <b>Off</b> ; the screen in <a href="#">Figure 4-59</a> appears.
<b>Collision Retry Forever</b>	Provide Collision Retry Forever function " <b>Disable</b> " or " <b>Enable</b> " on Web Smart Switch; If this function is disabled, when a packet meet a collision, the Web Smart Switch will retry 6 times before discard the packets. Otherwise, the Web Smart Switch will retry until the packet is successfully sent. Default mode is <b>Enable</b> and the screen in <a href="#">Figure 4-60</a> appears.
<b>MAC Table Auto-Aging</b>	Provide MAC address table aging time setting on Web Smart Switch; <b>available options are Disable. 150 sec. 300 sec. 600 sec.</b> Default mode is <b>300 sec</b> and the screen in <a href="#">Figure 4-61</a> appears.
<b>MAC Table Hashing</b>	Provide MAC address table Hashing setting on Web Smart Switch; <b>available options are CRC Hash and Direct Map.</b> Default mode is <b>CRC Hash</b> and the screen in <a href="#">Figure 4-62</a> appears.
<b>Web Auto Logout Time</b>	Provide Web auto logout time setting on Web Smart Switch; <b>available options are 5 min. 10 min. 20 min.</b> Default mode is <b>5 min</b> and the screen in <a href="#">Figure 4-63</a> appears.
<b>Apply button</b>	Press this button for save current Switch configuration on Web Smart Switch.

**Table 4-7** Descriptions of the Switch Configuration screen Objects



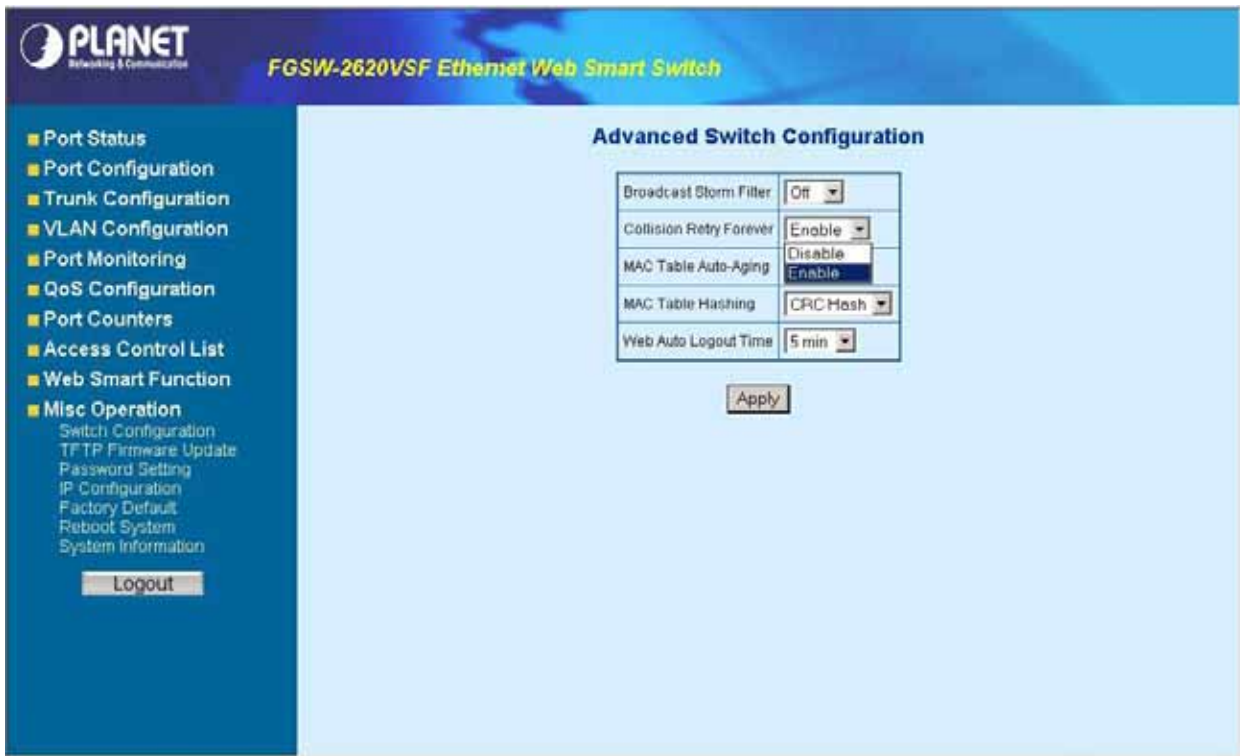


Figure 4-60 Switch Configuration Web Page screen

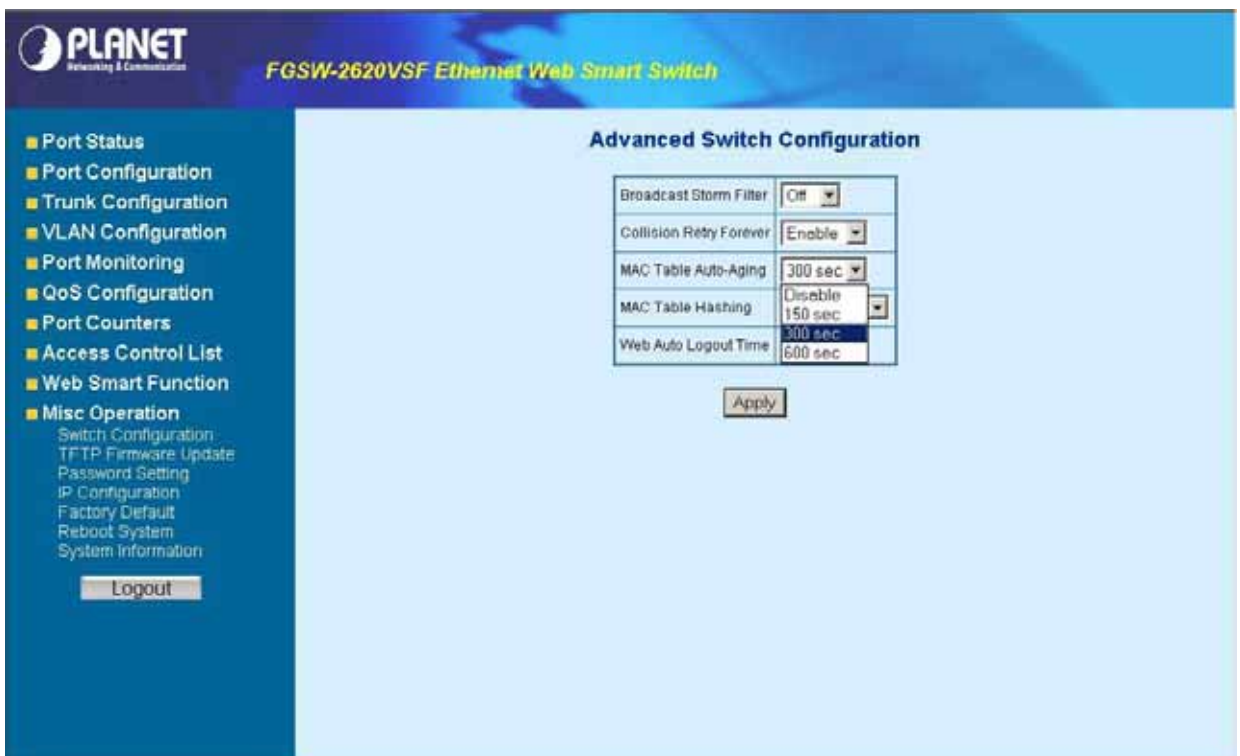


Figure 4-61 Switch Configuration Web Page screen



Figure 4-62 Switch Configuration Web Page screen



Figure 4-63 Switch Configuration Web Page screen

## 4.11.2 TFTP Firmware Upgrade

This section provides Firmware upgrade through TFTP method on Web Smart Switch, the screen in [Figure 4-64](#) appears.

**PLANET**  
Networking & Communication

*FGSW-2620VSF Ethernet Web Smart Switch*

- Port Status
- Port Configuration
- Trunk Configuration
- VLAN Configuration
- Port Monitoring
- QoS Configuration
- Port Counters
- Access Control List
- Web Smart Function
- Misc Operation
  - Switch Configuration
  - TFTP Firmware Update
  - Password Setting
  - IP Configuration
  - Factory Default
  - Reboot System
  - System Information

Logout

### TFTP Firmware Update

TFTP Server IP	192.168.0.99
Filename	FGSW-2620VSF_V1.0.BIN

Apply

**Figure 4-64** TFTP Firmware Update Web Page screen

### 4.11.3 Password Setting

This section provides password setting of Web Smart Switch, the screen in [Figure 4-65](#) appears and table 4-8 descriptions the Password Setting.



**Figure 4-65** Password Setting Web Page screen

Object	Description
<b>Password Protection</b>	Provide Password protection function "Disable" or "Enable" on Web Smart Switch; Default mode is <b>Enable</b> .
<b>User Name</b>	Provide to modify password on Web Smart Switch and maximum up to <b>six characters</b> . Default User Name is <b>admin</b> .
<b>New Password</b>	Provide to modify and input a new password on Web Smart Switch; maximum up to <b>six characters</b> . Default password is <b>admin</b> .
<b>Password Again</b>	Provide to input again new password for confirm on Web Smart Switch; maximum up to <b>six characters</b> . Default password is <b>admin</b> .
<b>Apply button</b>	Press this button for save current Password Setting on Web Smart Switch.

**Table 4-8** Descriptions of the Password Setting screen Objects

**Notice:**

Once disable the password protection then user name and password modify is not allow to use.

## 4.11.4 IP Configuration

This section provides IP Configuration on Web Smart Switch; the screen in [Figure 4-66](#) appears and tables 4-9 descriptions the IP Configuration.



**Figure 4-66** IP Configuration Web Page screen

<b>MAC Address</b>	Display MAC address on Web Smart Switch.
<b>IP Address</b>	Provide to modify IP Address on Web Smart Switch. Default IP address is <b>192.168.0.100</b> .
<b>Subnet Mask</b>	Provide to modify Subnet Mask on Web Smart Switch. Default Subnet Mask is <b>255.255.255.0</b> .
<b>Default Gateway</b>	Provide to modify Default Gateway on Web Smart Switch. Default Gateway is <b>192.168.0.254</b> .
<b>Apply button</b>	Press this button for save current IP Configuration on Web Smart Switch. Once press the Apply button then the pop window with <b>"IP changed. Please Click OK to Re-login"</b> appears. Press <b>"OK"</b> to re-login Web Smart Switch with new IP address.

**Table 4-9** Descriptions of the IP Configuration screen Objects

### 4.11.5 Factory Default

This section provides Factory Default function on Web Smart Switch, after choose this function and the following screen appears in Figure 4-67. Please press “OK” button to take effect and the switch will reset to factory default mode and ask you to waiting rebooting around 10 sec, press “OK” button to re-login the Web Smart Switch. The screen in Figure 4-68 & 4-69 & 4-70 appears.



Figure 4-67 Factory Default Web Page screen



Figure 4-68 Factory Default Web Page screen





Figure 4-69 Factory Default Web Page screen



Figure 4-70 Factory Default Web Page screen

#### 4.11.6 Reboot System

This section provides Reboot function on Web Smart Switch, after choose this function and the following screen appears in [Figure 4-71](#). Please press “OK” button to take effect and the switch will reboot and ask you to waiting rebooting around 10 sec, press “OK” button to re-login the Web Smart Switch. The screen in [Figure 4-72 & 4-73 & 4-74](#) appears.



Figure 4-71 Reboot Web Page screen



Figure 4-72 Reboot Web Page screen



Figure 4-73 Reboot Web Page screen



Figure 4-74 Reboot Web Page screen

### 4.11.7 System Information

This section display system information on Web Smart Switch, after choose this function and the following screen appears in Figure 4-75.



Figure 4-75 System Information Web Page screen

## 4-12 Logout

This section provide web logout function on Web Smart Switch, after choose this function and the following screen appears in Figure 4-76. Please press “OK” button to take effect and Logout pop window appears, press “OK” button to re-login the Web Smart Switch. The screen in Figure 4-77 & 4-78 & 4-79 appears.



Figure 4-76 Logout Web Page screen



**Figure 4-77** Logout Web Page screen



**Figure 4-78** Logout Web Page screen



- Port Status
- Port Configuration
- Trunk Configuration
- VLAN Configuration
- Port Monitoring
- QoS Configuration
- Port Counters
- Access Control List
- Web Smart Function
- Misc Operation

Logout

**Welcome to PLANET FGSW-2620VSF**

**24 Ports 10/100Mbps**

**Web Smart Switch**

[PLANET Technology Corporation](#)

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Figure 4-79 Logout Web Page screen

## 5. SWITCH OPERATION

### 5.1 Address Table

The Switch is implemented with an address table. This address table composed of many entries. Each entry is used to store the address information of some node in network, including MAC address, port no, etc. This information comes from the learning process of Ethernet Switch.

### 5.2 Learning

When one packet comes in from any port. The Switch will record the source address, port no. And the other related information in address table. This information will be used to decide either forwarding or filtering for future packets.

### 5.3 Forwarding & Filtering

When one packet comes from some port of the Ethernet Switching, it will also check the destination address besides the source address learning. The Ethernet Switching will lookup the address-table for the destination address. If not found, this packet will be forwarded to all the other ports except the port which this packet comes in. And these ports will transmit this packet to the network it connected. If found, and the destination address is located at different port from this packet comes in, the Ethernet Switching will forward this packet to the port where this destination address is located according to the information from address table. But, if the destination address is located at the same port with this packet comes in, then this packet will be filtered. Thereby increasing the network throughput and availability.

### 5.4 Store-and-Forward

Store-and-Forward is one type of packet-forwarding techniques. A Store-and Forward Ethernet Switching stores the incoming frame in an internal buffer, do the complete error checking before transmission. Therefore, no error packets occurrence, it is the best choice when a network needs efficiency and stability.

The Ethernet Switch scans the destination address from the packet-header, searches the routing table provided for the incoming port and forwards the packet, only if required. The fast forwarding makes the switch attractive for connecting servers directly to the network, thereby increasing throughput and availability. However, the switch is most commonly used to segment existing hubs, which nearly always improves overall performance. An Ethernet Switching can be easily configured in any Ethernet network environment to significantly boost bandwidth using conventional cabling and adapters.

Due to the learning function of the Ethernet switching, the source address and corresponding port number of each incoming and outgoing packet are stored in a routing table. This information is subsequently used to filter packets whose destination address is on the same segment as the source address. This confines network traffic to its respective domain, reducing the overall load on the network.

The Switch performs "Store and forward" therefore, no error packets occur. More reliably, it reduces the re-transmission rate. No packet loss will occur.

### 5.5 Auto-Negotiation

The STP ports on the Switch have built-in "Auto-negotiation". This technology automatically sets the best possible bandwidth when a connection is established with another network device (usually at Power On or Reset). This is done by detect the modes and speeds at the second of both device is connected and capable of, both 10Base-T and 100Base-TX devices can connect with the port in either Half- or Full-Duplex mode. 1000Base-T can be only connected in Full-duplex mode.

## 6.TROUBLESHOOTING

This chapter contains information to help you solve problems. If the Switch is not functioning properly, make sure the Ethernet Switch was set up according to instructions in this manual.

### **The Link LED is not lit**

Solution:

Check the cable connection and remove duplex mode of the Switch.

### **Some stations cannot talk to other stations located on the other port**

Solution:

Please check the VLAN, port trunking function that may introduce this kind of problem.

### **Performance is bad**

Solution:

Check the full duplex status of the Ethernet Switch. If the Ethernet Switch is set to full duplex and the partner is set to half duplex, then the performance will be poor.

### **100Base-TX port link LED is lit, but the traffic is irregular**

Solution:

Check that the attached device is not set to dedicate full duplex. Some devices use a physical or software switch to change duplex modes. Auto-negotiation may not recognize this type of full-duplex setting.

### **Why the Switch doesn't connect to the network**

Solution:

Check the LNK/ACT LED on the switch Try another port on the Switch Make sure the cable is installed properly Make sure the cable is the right type Turn off the power. After a while, turn on power again.

### **How to deal forgotten password situation of FGSW-2402VS/FGSW-2620VSF**

Solution:

Please press Reset button at front panel for 5 seconds then the Web Smart Switch will reset to factory default mode(username and password: admin)

# APPENDIX A NETWORKING CONNECTION

## A.1 Switch's RJ-45 Pin Assignments

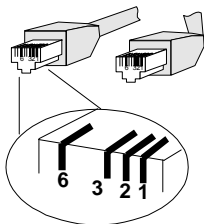
1000Mbps, 1000Base T

Contact	MDI	MDI-X
1	BI_DA+	BI_DB+
2	BI_DA-	BI_DB-
3	BI_DB+	BI_DA+
4	BI_DC+	BI_DD+
5	BI_DC-	BI_DD-
6	BI_DB-	BI_DA-
7	BI_DD+	BI_DC+
8	BI_DD-	BI_DC-

10/100Mbps, 10/100Base-TX

RJ-45 Connector pin assignment		
Contact	MDI Media Dependant Interface	MDI-X Media Dependant Interface -Cross
1	Tx + (transmit)	Rx + (receive)
2	Tx - (transmit)	Rx - (receive)
3	Rx + (receive)	Tx + (transmit)
4, 5	Not used	
6	Rx - (receive)	Tx - (transmit)
7, 8	Not used	

## A.2 RJ-45 cable pin assignment



The standard RJ-45 receptacle/connector

There are 8 wires on a standard UTP/STP cable and each wire is color-coded. The following shows the pin allocation and color of straight cable and crossover cable connection:



**Figure A-1: Straight-Through and Crossover Cable**

Please make sure your connected cables are with same pin assignment and color as above picture before deploying the cables into your network.